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ABSTRACT

In 1989, Valmont Industries, a global manufacturer of steel lighting poles, center pivot irrigation systems, and other technologies and Metropolitan Community College began to work closely to address the basic skills training needs of Valmont workers. This partnership provided a unique educational opportunity for both Valmont employees and the communities in which they lived through a comprehensive program of assessment, performance-based curriculum development, job-based literacy instruction, and program evaluation. The program was designed to benefit more than 350 Valmont employees in Valley, Nebraska, and become a model for replication at other businesses. Valmont 2000 provided comprehensive employee skill assessments, individualized learning plans, job task/literacy analyses, performance-based curricula, academic advising, mentoring, tutoring programs, and an Employee Development Center. (Numerous appendixes to the 81-page report contain the following: mission statement; survey forms; participant case studies; sample assessments; update reports; partnership exercise; a symposium paper, "Workplace Literacy and the Role of the Industrial/Organizational Psychologist" by Durr and Peterson; job tasks procedure; minimum basic skills standards; sample curriculum; and employee orientation handbook. The attached external evaluator's final report provides supporting documentation to indicate that each objective was met.) (YLB)

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VALMONT 2000
Workplace Literacy for Lifelong Learning

Final Performance Report

Metropolitan Community College
and
Valmont Industries, Inc.

Prepared by
Kenneth M. Jones, Ed.D.
November, 1994

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This document is a product of the hard work and dedication demonstrated by the Valmont 2000 Project staff, the employees and management of Valmont Industries, Inc., and the staff and administration of Metropolitan Community College.

Special thanks is given to the following people for their invaluable assistance in putting this report together: Margaret Durr, Hope Songster, Kevin Spier, and Melanie Shaw.

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METROPOLITAN COMMUNITY COLLEGE
AND
VALMONT INDUSTRIES

Valmont 2000: Workplace Literacy for Lifelong Learning

ABSTRACT

New technologies, changing management styles, and a shrinking labor force are combining to create a workforce crisis in our country. Daily, employers lose money because their employees can not read, write, compute or communicate well enough to perform their jobs safely and efficiently. The U.S. Department of Education now estimates that 25 million adults - one in seven - are functional illiterates who are unable to use the traditional 3 R's, or to solve problems at a level that enables them to cope with the simplest of tasks. An estimated 45 million adults holding jobs in today's workplace are either functional or marginal illiterates. This workplace literacy problem is severely restricting American companies' ability to become high performance workplaces.

Valmont Industries, a global manufacturer of steel lighting poles, center pivot irrigation systems, and other technologies is in the process of transforming its organization into a high performance workplace. Here, worker teams must learn to problem solve and apply basis skills in the use of quality control processes. Equipping these workers with the literacy and other basic skill requirements necessary to meet the demands of changing technologies and management systems has become a major priority for the human resource department at Valmont.

Valmont and Metropolitan Community College (MCC) have worked closely since 1989 to begin to address the basic skills training needs of Valmont workers. Through a small pilot effort of assessment, providing classes, and performing a job task analysis, MCC and Valmont have been able not only to identify basic skill needs at Valmont, but to develop a plan for a model workplace literacy program. As a result, MCC and Valmont are proposing Valmont 2000: Workplace Literacy for Lifelong Learning. Embracing the philosophy that the need to develop skills will be life-long, Valmont 2000 provides comprehensive employee assessments, individual learning plans, job task/literacy analyses, performance based curricula, strong support services: Career and personal counseling services, a Valmont 2000 Employee Development Center, as well as mentoring and tutoring programs. The Project, which is designed to serve 350 Valmont shop floor employees, is proposed as a model to be replicated at all Valmont national and international locations. An extensive evaluation plan developed for the Project will use both quantitative and qualitative measures to assess all aspects of the Valmont 2000 Program.

B. INTRODUCTION

INTRODUCTION

As a result of the partnership between Metropolitan Community College (MCC) and Valmont Industries, Inc., the Valmont 2000: Workplace Literacy for Life-Long Learning Program was proposed. Major funding for the 18-month project was provided by the U.S. Department of Education. National Workplace Literacy Program. Significant in-kind and other financial support was also provided by Valmont Industries and MCC.

The need for the Program grew from MCC and Valmont's recognition that learning opportunities should progress from the "traditional" classroom environment to the workplace. Workers would be equipped to apply their basic literacy skills to solve work-related problems, to function as productive team members, to think critically, and to be prepared to assume new roles within the organization. Conceivably, a well-trained workforce would be better prepared to meet the challenges of a changing workplace within an increasingly competitive global marketplace.

The overall goals of Valmont 2000 were to provide training to 350 shop floor employees to upgrade their basic literacy skills, as they related to their respective job competencies, and to develop a plan for a model workplace literacy program.

The partnership original between Metropolitan Community College (MCC) and Valmont Industries was one that evolved over several years, beginning in 1989 when Valmont first approached the College with a request for a basic math skills class for their shop employees. Beginning in 1990, the College, with funding provided by Carl Perkins and State of Nebraska Economic Development funds, was able to provide Valmont employees basic skills classes and assessment/counseling activities on a small scale. As the working relationship between Valmont and MCC intensified, the increasing need for educational services and basic skills training for all employee groups continued to be evidenced and led to the development and implementation of the National Workplace Literacy Program: Valmont 2000.

Metropolitan Community College Profile

Metropolitan Community College is currently the fastest growing post secondary educational institution in the State of Nebraska, serving more than 600,000 residents in Douglas, Dodge, Sarpy and Washington counties in eastern Nebraska. Accredited by the North Central Association of Colleges and Schools (NCA), MCC is a publicly supported two year institution with three main campuses: Fort Omaha, South Omaha and Elkhorn Valley, and satellite centers located in Fremont, and LaVista, NE. These campus locations, numerous off campus sites, and the technologies of distance learning enable MCC to provide high quality educational programs and comprehensive services, primarily in career preparation and general education to people of all ages and educational backgrounds in its four county service area.

During the 1990-91 academic year, MCC served a credit enrollment of 19,401 students (an enrollment increase of 45% since 1988-89) in over 100 one year and two year career programs in allied health, business and office fields, construction technologies and public services as well as, an academic transfer program. Other important services provided by MCC include: general support courses, classes for business and industry, and continuing education courses.

The role of MCC has continually been to assist the student in overcoming his/her psychological, financial, geographic and previous educational barriers to higher education. To this end, the College has offered the most complete array of degree and certificate programs in the community college sector and taken a leadership role in developing and implementing alternative modes of instruction, support services, nontraditional College program and community services. From its beginning, MCC has pursued excellence in all endeavors. The goals and mission of the College have always been clearly and strongly enunciated and fully supported by its governing board, administrative leadership, and committed faculty and staff.

Valmont Industries, Incorporated

Valmont Industries Incorporated is a growth oriented global company which has earned a leadership position in irrigation, electrical contraction products, and metals distribution. It is an international company with over 4,500 employees world-wide.

Valmont's business activities are currently classified into the following industry segments:

> **Industrial projects**: The manufacturer and distributor of steel street and area lighting poles, traffic signals, electrical transmissions structures and light-wall steel tubing; the operations of Gate City Steel's steel service centers and steel reinforcing bar fabricating plants; the production of power supplies and corrosion protections equipment; and the manufacture and distribution of lamp ballasts and other devices through Valmont Electric.
>
> **Irrigation Products**: The manufacturer of center pivot and linear move mechanized irrigation systems and Computer aided management systems (CAMS) in world wide markets.

Twelve hundred of Valmont's employees are employed at Valley, Nebraska, a rural area, located approximately 10 miles from MCC's Elkhorn Valley Campus. Over nine hundred of those employees are non-management personnel.

Valmont has developed through its mission statement, a process of defining for each business unit, for each department, how the company's stated "Beliefs and Commitments" (See Appendix A) translates into everyday activities. The organization is attempting to address the development of its people through a variety of training programs, continuing education incentives and employee participation programs. It is Valmont's belief that these actions will produce the greatest return from their most valuable resource: its people.

The overall goals of Valmont 2000 were to provide training to 350 shop floor employees to upgrade their basic literacy skills, as related to their respective job competencies, and to develop a plan for a model workplace literacy program. The Valmont 2000 Mission statement (See Appendix B) and Objectives (See Appendix C) were distributed at the onset of the grant period to begin the marketing plan. Metropolitan Community College has worked cooperatively with Valmont Industries, Inc., to ensure that the Valmont 2000 goals and objectives have been satisfactory met.

C. Overview of Project's Goals and Objectives

C. *Overview of Project's Goals and Objectives*

Eleven Goals were proposed for the Valmont 2000 project. The attached Progress and Modifications chart provides an overview of those goals and respective objectives met by the Valmont 2000 staff. All necessary modifications related to the chart have been duly noted. Specific discussions related to the chart will be represented in other sections of this report.

Objective 1: To provide through August 1994, an effective plan of management to ensure the proper and efficient management of the Valmont 2000 (Workplace Literacy) Program.

IMPLEMENTATION STRATEGIES	PROGRESS	MODIFICATIONS	TIMELINE
1.1 Recruit and select professional and clerical staff.	Hire date — Title Name 5/3/93 — Project Coordinator Ph.D. 5/5/93 — Job Analyst Vern Peterson, Ph.D 6/21/93 — Full-Time Instructor Ken Jones Ed.D. 7/19/93 — Part-Time Instructor Karin Hjerpstedt 7/14/93 — Part-Time Instructor Martha Turner 7/14/94 — Part-Time Instructor Judith Jennum 7/17/93 — Part-time Counselor Ralph Ekwall 7/17/93 — Part-time Counselor Melanee Peterson 7/12/93 — Part-time Counselor Maggie Dawson 10/93 — Part-time Counselor Donna Billesbach	Vern Peterson left Valmont 2000 in February 1994. He was replaced by JoAnne Woleben, Kevin Spier, and Stephanie Armstrong, who were each assigned portions of the Job Analyst duties. Stephanie Armstrong completed her job analysis in June 1994. JoAnne Woleben completed her job analysis in June 1994. She completed the final report on the Mentoring Project in July 1994. All Part-time Counselors finished their job duties in June 1994. There are no further counseling duties expected through the end of the grant period. Some counselors have assumed the role of substitute instructors or job analysts if their qualifications were appropriate. Kevin Spier has completed his job analysis duties and has assumed the position of assisting with the data collection for the final evaluation report. Margaret Durr resigned her position effective July 13, 1994. Dr. Ken Jones served as Interim Director until the end of the grant period, with assistance from Metropolitan Community College and Valmont Managment Personnel..	March 1993

IMPLEMENTATION STRATEGIES	PROGRESS	MODIFICATIONS	TIMELINE

IMPLEMENTATION STRATEGIES	PROGRESS	MODIFICATIONS	TIMELINE
Objective 1.1 Continued	11/93 Part-time Instructor Diane Hocevar		
	11/93 Part-time Instructor Marita Hahn		
	0/93 Part-time Counselor Judy Richards		
	12/93 Part-time Counselor Beth Nimmo		
	10/93 Part-time Instructor Terry Heany		
	12/93 Part-time Instructor Nancy Conrad		
	1/93 Part-time Instructor Cindy Stover		
	3/94 Teacher Assistant Bess Turner		
	3/94 Teacher Assistant Conrad Decorazina		
	3/94 Teacher Assistant Jolene Schauer		
	3/94 Teacher Assistant Nick Carter		
	5/94 Part-time Instructor Joan Walsh		

	5/94	Teacher Assistant Becky Michaels		
	7/26/93	Part-time Counselor/intern /Job Analyst Kevin Spier		
	2/94	Part Time Job Analyst Stephanie Armstrong		
	2/94	Part Time Job Analyst/ Mentoring Development Consultant JoAnne Woleban		
	7/89	Curriculum Development Consultant Cliff Wakeman		
	7/78	Curriculum Development Terri Gibson		
	7/89	MCC Coordinator of Vocational Services Mark Carta		
	7/89	MCC Vice President of Community and Economic Development Dick Shaink		
	3/93	External Evaluator Patricia Halverson		

IMPLEMENTATION STRATEGIES	PROGRESS	MODIFICATIONS	TIMELINE
	5/94 Part-time Instructor Sandra Hunter 5/94 Teacher Assistant Diane Safford 7/1/93 Project Secretary Hope Songster 8/12/93 External Examiner Patricia Halverson N/A MCC Coordinator of Analytical Studies 7/89 Valmont Human Resources Development Manager Steve Narans N/A MCC Division Chair of Academic Foundations 10/93 Part-time Clerical/Data Entry Melanie Shaw	Two instructors, Terry Heany and Sandra Hunter have left the Valmont 2000 program. Conrad Decarozina has left the position of Teacher Assistant.	
1.2 Assign Project staff to deliver coordinated on-site services at Valmont Industries. Project Director coordinates ongoing Project activities and services at Valmont site in cooperation with Valmont HRD program and Advisory Team.	Set weekly staff meetings to address concerns and provide progress updates.	Staff Meetings are now held bi-monthly. The decrease in frequency is due to the beginning of the final session, and all curriculum has been developed and reviewed.	June 1993

IMPLEMENTATION STRATEGIES	PROGRESS	MODIFICATIONS	TIMELINE
1.3 Orient and train staff to MCC, Valmont, and Valmont 2000. Project staff oriented to Valmont, and Valmont HRD goals/expectations; participate in MCC professional development activities and Valmont in service programs as appropriate to job assignment.	Part-time Counselors - conducted orientation/training session. Part-time Instructors - conducted orientation/training session.		July 1993 ongoing
1.4 Establish and convene Valmont 2000 Advisory Team to assist in the development and implementation of on-going Valmont 2000 educational activities and services.	Valmont 2000 Task Force established August 2, 1993. Whit Bonifant, ICPD Production Manager Joe Goecke, Irrigation President Vanessa Brown, ICPD HR Manager Kirby Sullivan, Irrigation HR Manager Steve Narans, Corporate HR Manager Valmont 2000 Full-Time Staff Production Supervisors, Ad Hoc Members.	With Margaret Durr's resignation, Dr. Ken Jones now serves as facilitator of this meeting. Vince Corso, Corporate Manufacturing Manager has been added to the Task Force as well as Dan Wolfe, Production employee. With the hiring of the Irrigation Production Manager, Dennis Thome, Joe Goecke removed himself from the Task Force. Mr. Goecke did continue to monitor the progress of the program and receive updates, as did all Management at Valmont.	August 1993 ongoing through August 1994
1.5 Develop and implement marketing plans appropriate to employee groups and sensitive to employee feelings regarding skill deficiencies. Plan will package Valmont 2000 as lifelong learning within agenda of regular HRD program.	Presentations are made by Valmont 2000 staff and Valmont HR representatives and management at brown bags, shop committee meetings, individual meetings with Valmont supervisors and senior management, safety committee meetings, weekly updates on E-Mail, HR staff meetings, letter mailed to employees.	A follow-up Supervisor Survey is being completed to track the success of these marketing plans.	April 1993 ongoing through August 1994
1.6 Prepare and manage the Program budget in accordance with federal regulations.	Budget outlines established adherence to budget is ongoing. Several areas within the budget will go over budget. Reallocation of some funding may be necessary.	10% reallocation of funds to various areas may be necessary in Job Analysis and Part-time Instructor areas.	March 1993 ongoing through August 1994

IMPLEMENTATION STRATEGIES	PROGRESS	MODIFICATIONS	TIMELINE
1.7 Implement and evaluate Project objectives and strategies.	A quarterly review of the program is conducted by the External Evaluator. One visit has occurred in August 1993, January 1994, May 1994. Task Force members review progress and evaluate objectives and strategies weekly.	Task Force meetings are now being held bi-monthly. The final External Evaluator visit is was in August, 1994.	March 1993 ongoing through August 1994

Objective 2: To recruit and enroll through the 18 month project period, 350 participants and to provide 100% of the participants workplace literacy skill development activities and services to ensure attainment of literacy and other workplace basic skills essential to successful placement, continued employment, advancement in careers, and increased productivity.

IMPLEMENTATION STRATEGIES	PROGRESS	MODIFICATIONS	TIMELINE
2.1 Implement recruitment plan. Participation will be voluntary and open to all employees. Recruitment will, however, be targeted to include workers in shop floor job groups/25 job titles. Bulletin boards, newsletters, employee/supervisor team meetings, orientation sessions and employee to employee marketing approaches will be utilized according to a strategic plan.		At the request of Valmont management, all employees were informed that participation was mandatory, if TABE test results indicate non-mastery of an academic skill related to their respective job. Employees are identified for skill upgrading classes at the TABE Test Results Sessions. Their name is placed on a master list. Employees are notified of class openings via written and oral communication. In addition, several employees have voluntarily attended additional classes in an attempt to refresh their skills. Employees and Supervisors are informed of upcoming classes via written communication.	August 1993 ongoing through August 1994.
2.2 Administer comprehensive skills assessment to all participants as appropriate to needs. Basic skills assessments will include the Test of Adult Basic Education (TABE) normed writing samples, Computerized Assessment and Placement (CAP) or alternate tests as needed will be used to provide additional information for IEP development.	Currently, 448 shop production employees have been administered the TABE test. Informal testing is also administered during training to provide additional diagnostic data.		July 1993 on-going through August 1994.

2.3 Provide each participant Valmont 2000 skill development and support services to meet individual needs for workplace literacy and lifelong learning.	An Individualized Education/Career Plan is completed during the employee's TABE Test Results Session. Employees identified with learning problems are referred by the counselor for Special Needs Counseling services through Metropolitan Community College.		August 1993 ongoing through August 1994.

IMPLEMENTATION STRATEGIES	PROGRESS	MODIFICATIONS	TIMELINE
Skill Development Individualized Educational Plan Adult Literacy basic skills instruction reading, writing and compulation			
Skill Development Individualized Educational Plan Adult literacy instruction basic skills in reading, writing and computation GED preparation as needed Adaptability Critical thinking (problem solving) English as a Second Language (ESL) for students with limited English proficiency	Complete IEP during TABE Results Session, which is scheduled one week after employee takes the TABE. Conduct "Writing in the Workplace" class. Planning Reading and math in the Workplace class for implementation. During the TABE Test Results Session, employees wanting to earn their GED are provided with information about MCC's GED program. Critical thinking skills are integrated within the instructional program. Currently no ESL students have been identified.	Timeline for the TABE Results Session was changed from one week to ten days to accommodate production needs. Writing, Reading and Math classes are currently being implemented.	July 1993 ongoing through August 1994 August 1993 September 1993 July 1993 August 1993 ongoing through August 1994

IMPLEMENTATION STRATEGIES	PROGRESS	MODIFICATIONS	TIMELINES
Support Services			August 1993 ongoing through August 1994
Counseling/Advising Flexible scheduling options	Employees receive counseling during the TABE Test Results Session, or Special Needs Counseling as needed.		
Learning Center Services/Resources Mentoring Program	The Learning Center has been established, further development is ongoing.	Tutoring is available at student request.	
Company supported access to post secondary training	Employees may apply for tuition reimbursement under Valmont's guidelines.		
Distance learning options Optional child care (if needed) Full week training prior to being placed in job Curriculum modification for LD		Distance learning proposal has been developed.	
	Established procedures for referral evaluation, and curriculum modification of identified employees.		
Diagnostics for Learning Disabilities (through MCC to meet ADA)	Employees identified with learning problems are further evaluated through MCC special needs counselors. Valmont needs to develop a policy regarding the implementation of ADA guidelines within existing company policies.	Currently, the service of an interpreter is arranged through the Nebraska Department of Hearing Impaired for class sessions.	August 1993 ongoing through August 1994
2.4 Evaluate each participant's attainment of goals stated in Individualized Educational Plan.		Following the completion of Post Tests, each participant is scheduled for a TABE Test Results follow-up Session. The Individual Educational Plan (IEP), Goals, Career Plan and TABE Test Results will be reviewed.	October 1993 ongoing through August 1994

Objective 3: **Conduct job task/literacy analysis for 25 job titles in 12 job groups to determine needed workplace basic skills training/needed curriculum adjustments per designated job task area in ongoing process through August 1994.**

IMPLEMENTATION STRATEGIES	PROGRESS	MODIFICATIONS	TIMELINE
3.1 Observe employees on-the-job to determine basic skills required for effective job performance.		Implementation strategies *3.1 to *3.5 were originally proposed. Since implementation, however, it has been found that the process can be enhanced through revisions. Implementation strategies 3.01 to 3.23 reflect the process, as revised and currently functioning.	April 1993 ongoing through June 1994
3.2 Interview employees and supervisors in each job category to determine their perceptions of the basic skills needed in performing their jobs.	See comment 3.1		April 1993 ongoing through June 1994
3.3 Determine readability, math proficiency requirements and writing skills by examining all materials written and read on the job and required mathematical calculations related to specific job performance.	See comment 3.1		April 1993 ongoing through June 1994
3.4 Determine skill level gaps between current job description, actual skill level need and employee skill levels.	See comment 3.1		April 1993 ongoing through August 1994
3.5 Utilize job task analysis data in designing/modifying job specific basic skills curriculum constructing pre and post tests and providing appropriate follow up educational services.	See comment 3.1		
3.01 Establish a standardized job-analysis procedure.	A standardized job-analysis procedure has been developed to be applied to all twenty-five jobs analyses.		May ongoing through June 1993

IMPLEMENTATION STRATEGIES		PROGRESS	MODIFICATIONS	TIMELINES
3.02	Develop a job-analysis flow chart which summarizes standardized job-analysis procedure.	A job analysis flow chart has been developed.		May ongoing through June 1993
3.03	Develop a sample job-analysis product.	A sample job-analysis product has been developed.		May ongoing through June 1993
3.04	Present an overview of the standardized job analysis procedure, flow chart, and sample product to Human Resource Department representatives for their approval and modify if required.	The standardized job-analysis procedure, flow chart, and sample product have been presented to Human Resource Department representatives. Revisions were made and approvals obtained.		June ongoing through July 1993
3.05	Present an overview of the standardized job-analysis procedure, flow chart, and sample product to various interest groups (e.g., safety and management meetings) and coordinate procedure with other company programs so as to minimize redundancy and reduce pressure upon manufacturing personnel.	The standardized job-analysis procedure, flow chart, and sample product have been presented to all relevant interest groups. Meetings are still underway to integrate the job analysis procedure with existing company programs.		June ongoing through July 1993
3.06	Develop a job-analysis interview guide and job-analysis scheduling form.	A job-analysis interview guide and scheduling form was developed for use with the twenty-five job analyses.		June ongoing through July 1993
3.07	Select and order a survey of test cognitive abilities.	The Cognitive Abilities section of the Fleishman's Job Analysis survey (a survey of 21 cognitive abilities) and the Wonderlic Personnel Test (a cognitive abilities measure) were selected and ordered.		June ongoing through July 1993
3.08	Develop rating scales to assess the frequency and importance of job tasks.	Two rating scales, one for importance and one for frequency, have been developed.		June ongoing through July 1993

IMPLEMENTATION STRATEGIES	PROGRESS	MODIFICATIONS	TIMELINES
3.09 Establish Job Analysis Team to consist of a job supervisor and lead-person who is familiar with job and two incumbents.	A Job Analysis Team was established all twenty-five jobs to be analyzed.		June 1993 ongoing through June 1994
3.10 Establish 3-member Reading and a 3-member Writing Skills Assessment Teams.	Reading and Writing Skills Assessment Teams have been developed.		July 1993
3.11 Conduct 6 hours of work-site visits for each job (two hours per shift) and video tape each job as it is typically performed.	Work-site visits and video taping have been accomplished for all of the twenty-five jobs to be analyzed.		July 1993 ongoing through June 1994
3.12 Conduct 12 hours of incumbent interviews to determine (a) the job tasks performed on the job (b) collect copies of documents which are read or written by incumbents, and (c) survey mathematics skills required on the job.	Incumbent interviews have been completed for all of the twenty-five jobs to be analyzed.		July 1993 ongoing through June 1994
3.13 Administer the Cognitive Abilities section of the Fleishman Job Analysis Survey to determine the essential cognitive abilities required on the job (e.g., inductive and deductive reasoning).	The Cognitive Abilities section of the Fleishman Job Analysis Survey has been administered to incumbents within all of the twenty-five jobs being analyzed.		July 1993 ongoing through June 1994
3.14 Administer a cognitive abilities test to obtain a worker cognitive abilities profile by job category, score, and compute descriptive statistics.	The cognitive abilities test was administered to incumbents in all of the twenty-five jobs to be analyzed. They have also been scored and descriptive statistics have been computed.		July 1993 ongoing through June 1994
3.15 Analyze the reading and writing samples to determine reading grade equivalencies and writing levels.	Reading grade equivalencies and writing levels have been determined for all of the twenty-five jobs to be analyzed.	The client has decided to develop a company wide minimum reading grade equivalency and writing level. The process of selecting a reading and writing sample for analysis has been completed.	July 1993 ongoing through June 1994

IMPLEMENTATION STRATEGIES	PROGRESS	MODIFICATIONS	TIMELINES
3.16 Develop job-specific-job-analysis cover sheets which describes, in detail, the job analysis and data collection procedure, names of site contacts, persons interview, and dates of site visits and interviews, as well as the names of members of the Job Analysis and Skills Assessment Teams.	A job specific job-analysis cover sheet has been developed for all of the twenty-five jobs to be analyzed.		July 1993 ongoing through June 1994
3.17 Compile a Preliminary Job Analysis Inventory to existing job descriptions, job procedure information, and Dictionary of Occupational Titles job descriptions, and reconcile discrepancies.	All 25 Preliminary Job Analysis Inventories have been matched and reconciled.		July 1993 ongoing through June 1994
3.18 Match Preliminary Job Analyses Inventory to existing job descriptions, job procedure information, and Dictionary of Occupational Titles job descriptions, and reconcile discrepancies.	Twenty-five Preliminary Job Analysis Inventories have been matched and reconciled.		July 1993 ongoing through June 1994
3.19 Present members of the Skills Assessment Teams an overview of the job being performed to include video tape, reading and writing samples, proposed reading grade equivalencies and writing levels for their review and approval.	The members of the Skills Assessment Teams have approved the reading grade equivalencies and writing levels for all of the twenty-five jobs being analyzed.		July 1993 ongoing through June 1994
3.20 Obtain job task and cognitive ability ratings of frequency and importance, review the list of reading and writing documents and mathematics skills required on the job, and link each document and mathematics skill to its corresponding job task.	Ratings and linkages have been developed for all of the twenty-five jobs to be analyzed.		July 1993 ongoing through June 1994

IMPLEMENTATION STRATEGIES	PROGRESS	MODIFICATIONS	TIMELINES
3.21 Compute frequency and importance rating means and integrate with Preliminary Job Analysis Inventory to form a Final Job Analysis Inventory.	Completed on 25 job analyses		July 1993 ongoing through June 1994
3.22 Job Analysis Team members and a Human Resources Representative review and approve the Final Job Analysis Inventory.	Completed on 25 job analyses.		July 1993 ongoing through July 1994
3.23 Other job analysis related tasks.		(a) Conduct review sessions for Phase I data transmittal sheets. Note: Multiple reschedules are necessary due to no show rate. (b) Redo Phase I data transmittal sheets because of job changes.	

About the Phase I Data Transmittal Sheets.

Though the original Data Transmittal Sheets were well constructed, the product and process have come to be flawed. First, it relied upon job descriptions that were in place at Valmont, job descriptions that were, in many cases, too general or in some cases, incomplete. Second, the client never conducted Data Transmittal reviews to assure accuracy. As a result, much of the data has become outdated due to the many job changes that have occurred between the time the Data Transmittal Sheets were originally prepared and the time they were approved. Third, far too much time has gone into updating them. We have had to schedule multiple review sessions, often across three shifts, to locate the original contributors. Incumbents have often failed to show up for review sessions and separate review sessions have had to be scheduled to obtain Human Resources approval. Items have had to be deleted, linkages redeveloped, and potentially hundreds of hours will be spent retyping and proofreading output.

What does this mean?

1. Valmont 2000 has had to shoulder the time and expense of scheduling, rescheduling, and reviewing each Data Transmittal Sheet.
2. Efforts to schedule employees for training have been retarded.
3. Revisions will be made to the Data Transmittal Sheets, in several cases, based upon input from only one incumbent. As such, the Data Transmittal Sheet process when taken as a whole, will not stand the test of litigation.

Why worry about litigation?

Any procedure that makes selective personnel decisions among employees, is considered a test in the eyes of the law. And, as such, the procedures come to be subject to very demanding expectations. The training program, because of the likely correlation between future promotions or pay changes and success in training or TABE testing, will be interpreted by the courts as a selection procedure. As such, it is essential that the procedure upon which it was based, the job analysis, be legally defensible.

Objective 4: Design and implement through August 1994, individualized learning plans for 100% of Valmont employees with identified deficits to bridge the gaps found between literacy skills of employees and on-the-job requirements.

IMPLEMENTATION STRATEGIES	PROGRESS	MODIFICATIONS	TIMELINE
4.1 Administer basic skills assessments, determine job-related competency (utilizing job task analysis data), develop Individual Educational Plan.	The IEP is developed during the Employee's TABE Test Results Session. A comparison of the results focuses on Academic deficiencies related to the employees job title and job related tasks.		July 1993 ongoing through August 1994
4.2 Involve employee in developing, monitoring and evaluating individualized plan. Each employee works with Project staff, Counselor and instructors to develop and carry out a plan based upon individual needs and personal/career related and achievable goals. Employee assumes responsibility for achieving goals; Project staff monitor progress; intervene as needed to assure retention.	The employee verifies whether or not the job-related tasks and academic skills for their job title are accurate. During the conference the IEP/Career Plan is completed. The instructor reviews each participants IEP and implements the identified goals. Instructor monitors employee's progress through class observations, class work, and tests.		August 1993 ongoing through August 1994
4.3 Involve supervisors in supporting plan by making appropriate flexible scheduling arrangements, and providing other support to assure the employee attains goals.	Valmont's Senior Production Managers consult with their respective supervisors for the "best" class times for each shift.		April 1993 ongoing through August 1994
4.4 Schedule training during work hours; make available during all shifts.	Classes are scheduled during the employee's work hours and shift.		August 1993 ongoing through August 1994
4.5 Evaluate IEP.	See comments form Objective 2.4	See comments from Objective 2.4	October 1993 ongoing through August 1994

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Objective 5: To develop and provide through August 1994, performance based workplace specific basic skills/literacy training curriculum based upon job task analysis and cooperatively planned by Valmont employees and Valmont 2000 Project staff.

IMPLEMENTATION STRATEGIES	PROGRESS	MODIFICATIONS	TIMELINE
5.1 Develop and implement performance based, applied curriculum and syllabi for: individualized and/or group instruction in workplace basics job related literacy skills (reading, math, writing, communications) problem solving critical thinking - decision making	The syllabi for the reading and writing and math classes are complete. The curricula for all classes are developed. Individual and cooperative group activities are incorporated. Critical thinking, problem-solving, and communication skills are integrated throughout the curriculum.	Given the timeline of the grant to begin classes, (within 90 days of implementation) the curriculum is being developed concurrently with instruction.	July 1993 ongoing through March 1994
5.2 Utilize Dacum-like process to develop competency based curriculum providing applied academics (hands-on) and/or interactive learning experiences whenever possible in the development of curricular materials for 25 job skills areas. These curriculum materials which will incorporate learning methods appropriate to adults will be based upon actual skills required in the performance of the specific job tasks.	Competency-based learning guides are being developed for all of the twenty-five job titles.	Although a "true" match between class activities and direct application to each job shell area is recommended, the focus of the classes will be to develop strategies that cross all job skills areas.	July 1993 ongoing through March 1994
5.3 Utilize alternative instructional delivery systems: Multi-media instruction/interactive learning, computer assisted learning, cooperative learning groups, small group instruction, self-directed learning, tutorial, and other methods according to individualized plan/preferred learning style.	In addition to direct instruction an interactive video program is incorporated. Currently, a review is being conducted of other computer-assisted instructional systems.		August 1993 ongoing through January 1994

IMPLEMENTATION STRATEGIES	PROGRESS	MODIFICATIONS	TIMELINE
5.4 Track and monitor performance of all students utilizing MCC computerized tracking system and provide follow-up interventions as needed to ensure 90% of the participants attain optimum skill level development.	Explored the use of MCC computerized tracking system. Employee registrations are now listed on the MCC tracking system, as well as their final grade.		August 1993 ongoing through
5.5 Develop and implement Valmont 2000 video providing an orientation to basic skills and quality control techniques for all new and current employees focusing on the vital linkage between the acquisition of basic skills to the application of quality control and the assurance of enhanced productivity.	Video was produced in May, 1994. with the cooperation of Valmont executives. It will be used for orientation and dissemination.		July 1993 ongoing through August 1994

Comments for 5.1: Although Research and Development approach to curriculum development has some merits, a well thought out curriculum plan, designed and developed prior to scheduling class, would prove to be beneficial.

Objective 6: **To provide through August 1994, Valmont 2000 instructional support services and activities through the Valmont Development Center for 350 of Valmont 2000 participants.**

IMPLEMENTATION STRATEGIES	PROGRESS	MODIFICATIONS	TIMELINE
6.1 Develop and implement cooperative instructional support services to be delivered through the Developmental Center to include:		Curriculum has been fully designed and implemented. Securing of appropriate resource materials and equipment is ongoing.	March 1994
a) Instructional Resources			
1) Full resource library of video tapes appropriate to adult literacy and workplace basics.			August 1993
2) Basic skills, literacy, GED preparation instructional software.	The Beyond Words Interactive Video Program is being used as part of the instructional program.		August 1993
3) Multi-media learning modules including interactive video on specific reading, writing, and math skills.	See above		
4) Valmont 2000: Custom designed curriculum for workplace skills.	Curricula in all areas have been developed to be "Valmont Specific".	See comments for Objective 5.1	March 1994
5) Full range of print materials for basic skills/literacy supplemental practice.	These materials have been secured and are integrated into the curriculum.		August 1993 ongoing through March 1994

IMPLEMENTATION STRATEGIES	PROGRESS	MODIFICATIONS	TIMELINES
b) Equipment 1) Four (4) multimedia stations 2) Four (4) interactive video disk players 3) Two (2) televisions/VCRs	Explored the hardware needs for the software program. We have one station. One TV/VCR is being used during job analysis.		December 1993
c) Support Services 1) Career advising, assessment, and referral.	Career advising is limited to the development of the Employee's IEP/Career plan.		July 1993 ongoing through August 1994.
2) Employee Mentoring: New employee is matched to experienced employee to be introduced to skills needed in new job or to a new technology introduced into the job.	A mentoring program has been developed and implemented. The program handbook was created, and presently 7 individuals are acting as mentors.	Valmont currently uses an informal mentoring program within the shop floor areas. They review shop procedures.	March 1993 ongoing through August 1994.
3) Tutoring: Tutors from MCC, community, Valmont assist with learning of new skills.	Peer tutoring is integrated within the instructional program.	Tutors have been hired, and are currently available to assist instructors in most time frames. Tutors assist with either group or individual needs. Tutors are also working in smaller class settings individually, with students who are either borderline (needing only one or two areas of brush-up, or have learning disabilities identified. These tutors then have weekly planning sessions with the Full-Time Instructor.	August 1993 ongoing through August 1994
6.2 Conduct, according to weekly schedule, assessment testing, counseling and referral services for 100% of Valmont 2000 participants.		Assessment testing, counseling, and referral services occurs after the verification of the job analysis. Scheduling of these activities are dependent upon the Valmont production schedule.	July 1993 ongoing through August 1994

IMPLEMENTATION STRATEGIES	PROGRESS	MODIFICATIONS	TIMELINE
6.3 Hold scheduled Valmont 2000 training classes, workshops, and distance learning activities, to meet 100% schedules of all participants. Courses and workshops will include the following skill areas; however, additional workshops and seminars will be scheduled to accommodate guest speakers, and consultants, relevant teleconferences and other televised programs on issues related to workplace basics.	Classes are scheduled according to the recommendations of the production managers. Once the schedule is determined, they are held bi-weekly.	Upon determination from student speakers from Engineering, Drafting, and Human Resources have presented an overview on reading content and completion of documents specific to the job.	August 1993 ongoing through August 1994
Basic Skills Courses: Reading Applied Basic Skills Writing Reading Schematics Computation Problem Solving Options: GED Preparation Classes ESL Classes Telecourse Instruction in "Advanced Basics"	See comments under Objective 2.3. See comments under Objective 2.3. See comments under Objective 2.3. See comments under Objective 2.3.	Problem solving has been incorporated within the Reading, Writing and Math class curriculum.	July 1993 ongoing through March 1994
6.4 Modify curriculum as appropriate to meet needs of employees with disabilities.	See Objective 2.3.		July 1993 ongoing through August 1994

Objective 7: **Develop and implement through August 1994, Valmont 2000 mentoring program to assist new and/or current employees requesting mentors acquire essential basic or technical skills needed to start a new job or to learn a new technique or technology on the job.**

IMPLEMENTATION STRATEGIES	PROGRESS	MODIFICATIONS	TIMELINE
7.1 Recruit and identify mentors from a pool of experienced employees to serve as role models and job coaches as new employees enter jobs, or as other employees are promoted or need to adjust/learn new technologies introduced into jobs.	Mentors are voluntary positions chosen by shop instructors, supervisors and reviewed by the Task Force.		March 1993 ongoing through August 1994.
7.2 Train mentors utilizing training videos, role playing and other interactive learning experiences, in training sessions held quarterly.	A formalized mentoring program has been developed.		
7.3 Develop and distribute mentor handbooks.		Completed through training.	
7.4 Assign mentor to colleague.		A listing has been provided to all new students.	
7.5 Evaluate mentor training.	A final evaluation meeting was held with the mentors. Feedback from this meeting will be included in the final report.	Evaluation of the program will proceed with lunch meetings with the existing mentors.	
7.6 Evaluate mentoring experience.	A final report has been composed and will be placed within the final grant report.	A timeline for evaluation has been developed and will be implemented during the final class session.	

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Objective 8: To provide through August 1994 a Valmont 2000 tutorial program to assist employees with special learning needs successfully achieve literacy goals.

IMPLEMENTATION STRATEGIES	PROGRESS	MODIFICATIONS	TIMELINE
8.1 Recruit and enroll tutors from among Valmont employees (including those who have completed Valmont 2000 basic skills training), MCC staff, and the community members.	Teacher-Assistants were recruited from outside of Valmont due to concerns with confidentiality. Seven Teacher-Assistants are currently on staff. They assist Instructors in both group and individual classes.	See comments under Objective 6.1 C-3.	March, 1994
8.2 Train tutors in methods of adult literacy instruction through 12 hour training program offered quarterly by MCC Academic Foundations department.		Teacher-Assistants have received 12 hours of training.	March, 1994
8.3 Develop and provide each tutor a Valmont 2000 Tutor Handbook.	Teacher-Assistants are given a copy of the Employee Handbook.		March, 1994
8.4 Assign tutor to individual or group tutoring.	Teacher-Assistants are assigned to classes dependent upon their availability and needs within the classes.	Special requests by students are filled by Tutors either on a rotation basis or at personal request.	May, 1994
8.5 Evaluate tutor training.	Teacher-Assistants are given evaluations each session through the evaluation process.		May, 1994
8.6 Evaluate tutoring activity.	Instructors as well as students are given the opportunity to evaluate the Teacher-Assistants.		May, 1994

Objective 9: **To provide through August 1994, Valmont 2000 optional delivery systems for workplace literacy/skills development curriculum, workshops, and seminars through distance learning technology including satellite down-link nationally/internationally, and through telecourse instruction.**

IMPLEMENTATION STRATEGIES	PROGRESS	MODIFICATIONS	TIMELINE
9.1 Develop long-range distance education plan for workplace literacy program	Explored equipment needs to implement objective.	Future development is dependent upon Valmont's budgetary process.	August 1993 ongoing through August 1994
9.2 Coordinate programming with MCC Instructional Media Production (IMP), Nebraska Satellite Television Network Corpnet (NEB•SAT), and other Valmont sites to schedule programs with direct application to the learning of SCANS competencies on an ongoing basis.	See attached Distance Learning Review.		March, 1994
9.3 Utilize telecourse instruction, providing access to alternative certificate and associate degree programs to facilitate career advancement for Valmont employees completing workplace literacy training.	See above comment 9.2.		March, 1994

Objective 10: To provide through August 1994, mechanisms for continually monitoring participants' performance and maintaining Project files, data and reports.

IMPLEMENTATION STRATEGIES	PROGRESS	MODIFICATIONS	TIMELINE
10.1 Utilize computerized tracking system to track and monitor all participants' progress from enrollment through completion of Valmont 2000 training.	Explored factors to consider prior to implementation.		September 1993 ongoing through August 1994.
10.2 Record all contacts and interventions for each participant utilizing computerized tracking system and manual records.	Recording of all class participants and grades has been implemented through MCC.		September 1993 ongoing through August 1994
10.3 Maintain Project records, documenting each participants' progress in training, participation in Valmont 2000 support services and Project retention activities.	See above.		

Objective 11: To evaluate through August 1994, the progress of the Valmont 2000 program through the use of evaluation measures that assess the degree to which the Project objectives have met the criteria and that include the development of qualitative and quantitative tools that measure the attainment or enhancement of job specific basic skills and other workplace outcomes.

IMPLEMENTATION STRATEGIES	PROGRESS	MODIFICATIONS	TIMELINE
11.1 Implement a model for Valmont 2000 Program evaluation capable of monitoring and evaluating individual curricula performance on cyclical schedule.	Program evaluation includes quarterly visits, conducted by the external evaluator. Course evaluation and Instructor surveys are completed at the end of class, by the class participants. Additional internal measures such as productivity, number of accidents, tuition reimbursement requests, and other indicators yet to be identified will be used to evaluate the program. These indicators are not directly related to the training. Therefore, a multi-purpose survey measures the level and strength of employee self-efficacy, job satisfaction, and organization commitment. The survey is administered three times: prior to taking the TABE, following TABE feedback, and upon completion of the training.		August 1993 ongoing through August 1994
11.2 Develop both qualitative and quantitative assessment tools to measure both skill development in competency based curricula and employee/employer satisfaction with Project outcomes. Pre and post test measures tied to program learning objectives and based upon job task analysis used to measure participant skill development. Surveys and interviews utilized to measure student feelings, employers' evaluation of impact on productivity of Valmont.	See comments noted above.		May 1993 ongoing through August 1994

IMPLEMENTATION STRATEGIES	PROGRESS	MODIFICATIONS	TIMELINE
11.3 Define indicators and selection criteria for identification of success and deficiency functions.	See comments noted above.		May 1993 ongoing through August 1994
11.4 Conduct ongoing Project evaluation using four types of evaluative processes: Formative Internal, Formative External, Summative Internal and Summative External to continually monitor and assess all intervention strategies.	See comments noted above.		May 1993 ongoing through August 1994
11.5 Conduct annual employee follow-up study. Develop and administer survey.		Valmont does not wish to purse this activity.	May 1993

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D. Evaluation

EVALUATION

The evaluation of the Valmont 2000 Project implemented an evaluation model suggested by the Colorado Community College and Occupational Education System (CCCOE) (Workforce Skills, Winter, 1994). This Workplace Learning Evaluation Model incorporates quantitative (standardized tests) and qualitative (surveys, interviews, observations) measures to assess participant improvement. According to the proponents, there are four "levels" on which the data is reviewed. These levels involve Student Reaction, Student Learning, Student Performance, and Organizational Results. However, for our purpose, we added two additional "levels" - Instructor Evaluation of the Program and the External Evaluator Reports. The purpose of this section is to discuss the effect Valmont 2000 had on the various levels.

PARTICIPANTS

The Valmont 2000 Training Program involved 448 shop floor employees with a mean age of 37.4 years. Their average level of education was 12.9, but there were many with GED's. There were 420 males and 28 females. One hundred seventy-two (172) reported being single head of household. The ethnic make-up of the training participants included 424 Caucasians, 7 Blacks, 6 Hispanics, 3 American Indian/Alaskan Native, 1 Asian/Pacific Islander, and 7 Other/No response. Three participants identified English as their second language. Of the 448 participants taking the Test of Adult Basic Education (TABE), 384 required basic skills training in reading, writing and/or math.

LEVEL ONE: Student Reaction to Valmont 2000

Student reaction is generally defined as how well the participants "enjoyed" the training. Specifically, the participants were asked to evaluate their communication skills (written vs. oral) to evaluate, their level of self-efficacy, to evaluate the procedures used to implement the training program, and to evaluate the results of training.

Assessment Tools:

To measure of student's reactions, the following assessment tools were developed:

1. Communication Survey.
2. The Self-Efficacy portion of the Multi-Purpose Survey
3. Mentoring
4. Case Studies Report.

A brief description of each evaluation tool will be presented, along with some general conclusions. The reader is advised to refer to the respective appendices for further details.

COMMUNICATION SURVEY

The purpose of the Communication Survey (See Appendix D1) was to solicit the participants' evaluation of his/her speaking and writing skills. The survey is comprised of nine positively worded statements. The respondents were asked to read the statements and choose the response that closely matched their respective opinion. The responses range from Strongly Agree to Strongly Disagree. The "No Opinion" response was the midpoint between the responses. The responses were scored on a five-point (Likert-type) scale. The survey was administered prior to training (pre) and after training (post). The Participants completed the survey for each class he/she attended. In addition, the survey was administered to all participants regardless of the class they attended. Tables 1 and 2 illustrates the participants' responses on both administrations. It should be noted that the discrepancy between the total number of respondents was due to a variety of factors. These factors included lost or missing data, the respondents' refusal to complete all or part of the survey, the participants not completing the class requirements (at the time of the report), and/or other participant reasons.

SURVEY RESULTS:

Items 1, 6, 7, and 8 focused on the participants' judgment of their writing skills. A comparison between both administrations indicated a mean response of 2.90 and 2.80, respectively. These mean scores generally indicated "No Opinion".

Items 2, 3,5, and 9 focused on the participants' judgment of their speaking skills. A comparison between the pre/post administrations indicated a mean response of 2.80 and 2.64, respectively. These mean scores also suggested that the respondents had "No Opinion" regarding their speaking skills. Closer inspection of the individual items shows a downward trend between the pre/post administrations.

Item 4 asked the participant to judge whether his/her speaking and writing skills were similar. Again, a comparison of means also indicated "No opinion".

Based upon the results noted above, the participants were essentially non-committal in their assessment of their speaking and writing skills.

The following conclusions may be indicated:

1. The items of the communication Survey may be too broad. It may have been more appropriate to single out specific skill areas. For example, "My writing skills are good when I complete company forms." This would allow the participant to judge their writing as related to specific skills identified in training.
2. The time frame between the acquisition of skills and the post administration was too short. The short period of time would not allow the employee to practice his/her skills.
3. The respondents may have been overly critical of his/her skills and not notice any improvement.
4. The respondents may not have felt honest disclosure was necessary despite the instructor's suggestion to the contrary.

TABLE 1: Pre Training Communication Survey Responses
(n=459)

Question	Number of Responses	SD	Average
1. Writing skills are good	456	.959	2.660
2. Confidence speaking before a group.	458	1.062	3.026
3. Stronger speaking skills than writing	458	1.028	2.764
4. Similar speaking/writing skills	457	.915	3.022
5. Speaking skills are good.	458	.925	2.609
6. Stronger writing skills than speaking.	450	.930	3.100
7. Confident when writing.	447	1.001	2.857
8. Writing tasks easy.	447	.966	3.009
9. Speaking tasks easy.	447	1.009	2.826
TOTAL	**446**	**.584**	**2.876**

TABLE 2: Post Training Communication Survey Responses
(n=433)

Question	Number of Responses	SD	Average
1. Writing skills are good	433	.958	2.483
2. Confidence speaking before a group.	431	.989	2.784
3. Stronger speaking skills than writing	433	1.051	2.612
4. Similar speaking/writing skills	433	.952	2.972
5. Speaking skills are good.	432	.875	2.479
6. Stronger writing skills than speaking.	426	.970	3.094
7. Confident when writing.	408	.976	2.755
8. Writing tasks easy.	408	.986	2.931
9. Speaking tasks easy.	408	.973	2.713
TOTAL	**406**	**.580**	**2.761**

MULTI-PURPOSE SURVEY - SELF EFFICACY

The following information is a summary of the results gleaned from a report on the Multi-Purpose Survey (MPS) (See Appendix D2) noted in Appendix D3. The reader is advised to read this report. For the purpose of this discussion, we shall discuss and briefly describe the MPS and the results of the Workers' Confidence in Their Ability to Perform Their Job portion of the survey.

The MPS Survey measures the participants' attitudes in the following areas:

1. Worker Confidence Performing Their Job.
2. Worker Perception of Supervisory Support.
3. Worker Perception of Co-Worker Support.
4. Worker Confidence in Their Ability to Benefit from Academic Training.
5. Worker Job Satisfaction.
6. Worker Perception of Organizational Commitment.

The results are illustrated in Table 3.

TABLE 3:

WORKER CONFIDENCE IN THEIR ABILITY TO PERFORM THEIR JOB

Reading Training Participants Only

Time of Measure	Average Rating	Number Responding
Entry into program	6.46	79
Following Counseling	6.37	76
Following Training	6.05	73

Math Training Participants

Time of Measure	Average Rating	Number Responding
Entry into program	6.56	184
Following Counseling	6.45	182
Following Training	6.22	182

Writing Training Participants Only

Time of Measure	Average Rating	Number Responding
Entry into program	6.50	270
Following Counseling	6.43	269
Following Training	6.09	265

All Participants Combined

Time of Measure	Average Rating	Number Responding
Entry into program	6.55	446
Following Counseling	6.46	441
Following Training	6.13	520

It is interesting to note that the mean rating of the participants' confidence in their ability to perform their job was lower following training, regardless of the type of training received. A similar trend was noted when the results of all participants were aggregated. Some possible explanations for the decline may be due to the short time period between acquisition of a new skill (s) and limited opportunities to apply the newly acquired skills on-the-job. A ceiling effect may be possible because the initial responses were high in all areas. Because the employee completed the survey a minimum of three times, the employees may not feel the need to provide an honest disclosure of his/her perceptions.

As noted in the report, a response format other than the Likert Scale, may be necessary. It was suggested that a response scale written in sentence format (similar to the Job Satisfaction Scale) would provide more variance in the participants' responses

MENTORING PROGRAM

As part of the overall goals for Valmont 2000, the implementation of the Mentoring Program was a key component. This report is a summary of a more complete description and report which may be found in Appendix D4. The overall purpose of the Valmont 2000 Mentoring Program was to provide present and future participants a source to contact regarding the Valmont 2000 Program. It was felt that employees would be more apt to ask questions of peers who experienced the training than the project developers. There were six mentors who met the following qualifications. In order for an employee to become a mentor she/he must meet the following qualifications:

1. Referred by an instructor
2. Received supervisor approval.
3. Successfully complete the Valmont 2000 Mentoring Program.
4. Demonstrated a willingness to accept the role as mentor.
5. Completed the Mentor Training Evaluation Survey (MTES)

The purpose of the MTES was to evaluate the mentors' opinion of the Valmont 2000 Mentor Training Program. Specifically, they were asked to evaluate the handbook, to judge the effectiveness of training in preparing them for questions about the program, to rate the trainer's responsiveness to the mentors' questions, comments, or concerns, and to self-evaluate their level of confidence to answer questions from plant personnel.

On a scale of 1 (I disagree) to 10 (I agree), the respondents were asked to circle the number that closely expressed their feelings on ten positively-worded statements.

The results indicated an average rating of 8.10 on the handbook, 8.10 on the training, 9.10 on the trainer's effectiveness, and 7.30 on the mentor's level of confidence. The overall mean rating for the MTES was 8.3. On the basis of the aforementioned ratings, all areas were rated in a positive direction. The relatively low rating by the mentors confidence level was expected because of the mentors' "fear of the unknown." The "unknown" refers to their response to a peer's question. It should be noted that after a follow-up training session, the mentors felt more comfortable with their roles as mentors. In addition, they reported lower employee contacts then expected. They suggested more publicity about the mentoring program to increase employee contacts. Other marketing ideas could include increased exposure through the E-mail/bulletin board announcements, training announcements, and presentations given at safety, department, or JIT meetings.

CASE STUDIES REPORT

The following information is also a summary of a more complete report (See Appendix D5). The purposes of the Case Studies Report were twofold. First, this evaluation tool solicited the opinions of nine employees, who finished training on Valmont 2000's testing, counseling, and teaching processes. Furthermore, the Valmont 2000 staff members sought the participants' feedback regarding the effectiveness of the teaching strategies used in the training. The nine participants were interviewed through a 28 item questionnaire and provided a case study based upon follow-up questions.

Based on the data, the following impressions were developed.

1. The employees were pleased with the willingness of Valmont's management to expend its time and resources into the Valmont 2000 Project.
2. The employees reported their pleasure with Valmont allowing training to occur during their respective shifts.
3. The employees were pleased to participate and receive training and counseling at no cost to them.
4. The employees specifically noted that they remember the classes and the instructors who taught them. It was concluded by the investigators that the instructors were "key" to the success of the program.
5. The participants praised those who were responsible for conceiving the grant, planned the program and managed the program.

CONCLUSIONS

In response to the question: "Would you recommend this program to other employees?" The answer appears to be "Yes!". However, the results of the various measures indicated that some revision is in order to detect changes between the attitudes prior to and after training. It is not unusual to observe the importance of the instructor in a teaching situation. Instructors bring to the learning dyad their experiences, expertise, and personalities. However, none of this (Workplace Training Programs) would be possible without a "solid" commitment from management. Valmont's' commitment to their employees conveyed the message, "We care about you."

LEVEL TWO: STUDENT LEARNING

The second level of the Workplace Learning Evaluation Model focuses on how much have the participants learned and what have they learned. Formal and informal assessment measures were used to answer these two questions. The following discussion will examine the results of Valmont 2000 participants on the formal (TABE) and informal evaluations (in-class).

DESCRIPTION OF THE TABE:

The Test of Adult Basic Education (TABE) is a nationally standardized test used to assess basic skill levels in the areas of reading, math, and writing. Form 5, Level D, of the TABE, was administered by the Valmont 2000 staff throughout the entire project. This level of the TABE is designed to measure skills within a grade equivalency range between 6.6 - 8.9. Individual scores on the TABE remained confidential at all times.

TABE ADMINISTRATION

The administration of the TABE served two purposes in the Valmont 2000 project. The first administration, which marked entry into the program, was used to assess the employee's basic skill training needs in the areas of reading, math and writing as related to their individual job requirements. The second administration took place during the final week of the training session and only included testing in the area where training occurred. For example, if the employee was involved in a math class, she/he would be given the math subtest. The goal of the second administration was to measure improvement after training.

PARTICIPANTS

Refer to demographic information discussed earlier in this section.

RESULTS

The results include pre-TABE scores for all Valmont employees. Post-TABE scores are not included for all Valmont employees because only those required to attend one or more training sessions were retested. Therefore, the scores are reported separately for those Valmont employees who have completed training in reading, math, and writing (refer to the following TABE results data).

Among the 79 individuals that completed training in reading, 75 were given the Post-TABE. The average scale scores increased from 749 to 757. According to the TABE NORM BOOK (1990) "Scaled scores are units of a single, equal-interval scale that is applied across all levels of TABE 5 & 6. " (p.4) Scale scores allow for direct comparison between classes. The average grade equivalency increased from 7.8 (seventh year 8th month of schooling) to 8.5 (eighth year and fifth month of schooling).

Among the 185 individuals that completed training in math, 172 completed the Post-TABE. The average scale scores increased from 774 to 795. The average grade equivalency increased from 8.7 to 12.9.

Among the 271 individuals that completed training in writing, 263 completed the Post-TABE. The average scale scores increased from 725 to 744. The average grade equivalency increased from 8.4 to 11.1

September 10, 1994

Average Age = 37.4

PRE-TABE SCORES FOR ALL VALMONT EMPLOYEES TESTED

(n=448)

	Average Scaled Score	Grade Equivalency	Minimum Raw Score	Minimum G.E.
Reading Test Score	790	12.9+	634	2.9
Math Test Score	784	9.7	605	2.5
Language Test Score	734	9.4	529	0.9
Total Battery	769	10.7	608	2.4

356 individuals have completed at least one training session. (80%)

PRE AND POST TABE SCORES FOR VALMONT EMPLOYEES WHO HAVE COMPLETED TRAINING IN READING

(n=79 - 4 post missing)

	Average Scaled Score	Grade Equivalency
Pre-Training Score	749	7.8
Post Training Score	757	8.5

PRE AND POST TABE SCORES FOR VALMONT EMPLOYEES WHO HAVE COMPLETED TRAINING IN MATH

(n=185 - 13 post missing)

	Average Scaled Score	Grade Equivalency
Pre-Training Score	774	8.7
Post Training Score	795	12.9

PRE AND POST SCORES FOR EMPLOYEES WHO HAVE COMPLETED TRAINING IN WRITING

(n=271 - 8 post missing)

	Average Scaled Score	Grade Equivalency
Pre-Training Score	725	8.4
Post Training Score	744	11.1

NOTE: The above data is updated through the completion of the fifth session (August 29, 1994).

BY DIVISION

PRE-TABE SCORES FOR ALL VALMONT EMPLOYEES TESTED

	IRRIGATION (n=272) Average Age = 36.6		ICPD (n=173) Average Age = 38.9	
	Average Scaled Score	**Grade Equivalency**	**Average Scaled Score**	**Grade Equivalency**
Reading Test Score	787	12.9+	794	12.9+
Math Test Score	782	9.4	787	10.4
Language Test Score	734	9.4	735	9.5
Total Battery	768	10.5	772	11.5

COMPLETED TRAINING IN READING

	IRRIGATION (n=54 - 3 post missing)		ICPD (n=25 - 1 post missing)	
	Average Scaled Score	**Grade Equivalency**	**Average Scaled Score**	**Grade Equivalency**
Pre Test Score	748	7.8	750	7.9
Post Test Score	754	8.2	763	9.0

COMPLETED TRAINING IN MATH

	IRRIGATION (n=102 - 10 post missing)		ICPD (n=82 - 3 post missing)	
	Average Scaled Score	**Grade Equivalency**	**Average Scaled Score**	**Grade Equivalency**
Pre Test Score	773	8.6	774	8.7
Post Test Score	794	12.7	796	12.9+

COMPLETED TRAINING IN WRITING/LANGUAGE

	IRRIGATION (n=154 - 5 post missing)		ICPD (n=117 - 3 post missing)	
	Average Scaled Score	**Grade Equivalency**	**Average Scaled Score**	**Grade Equivalency**
Pre Test Score	724	8.3	727	8.6
Post Test Score	740	10.1	748	12.3

CONCLUSIONS

There is a significant increase in TABE scores after training in reading, math, and writing. However, the increases are considerably larger after training in math and writing. Much speculation was given to the smaller increase after training in reading. This information will no doubt be beneficial in future curriculum development. The limited increase in reading scores may be due in part to the following:

1. Limited practice opportunities as related to the level of the student reading deficits. Eight weeks of training may not be enough time to affect an appreciable difference.
2. The reading curriculum needs to be revised to teach specific reading strategies (i.e., decoding skills).
3. The use of mean scores "diluted" the amount of gain within individual students. Therefore, those students possessing "higher" skills may not have grown as those possessing lower reading skills.

IN-CLASS ASSESSMENTS

In-class assessments (See Appendix D6) were designed by Valmont 2000 instructors and Metropolitan Community College Curriculum Development Consultants to further assess student development in each training course. The in-class assessments provided a measure of student skills that enhanced standardized evaluation procedures such as the TABE. Individual scores on the in-class assessments remained confidential at all times.

Below is a discussion of the Informal Class Assessments according to the respective content area.

READING ASSESSMENT:

The informal reading assessment was composed of 60 items which focused on reading vocabulary and reading comprehension. The vocabulary component assessed the participants' understanding of synonyms, antonyms, prefixes, suffixes, and their ability to use context clues during the reading process. The comprehension section assessed the participants' ability to silently read selected passages and answer follow-up questions. Scoring the assessments simply involved totaling the number of items correctly answered by the participant.

MATH ASSESSMENT:

The Valmont 2000 Math assessment (Pre/Post) contained 65 and 70 items. Initially the pre-assessment was divided into five parts. Each part assessed the participants' ability to solve computation problems using the four basic operations in the following contexts: whole numbers, decimals, fractions, and percents. With the exception of adding a section on work problems, the post test was similar to the pretest. A score was derived by counting the total number correct throughout the test.

WRITING ASSESSMENT:

The writing assessment was composed of proofreading test and securing a writing sample. The Proofreading Assessment (Pre/Post) contained 56 and 53 items. The proofreading assessment examined the participants' knowledge of writing mechanics and their ability to correct writing errors in a variety of contexts. The following writing concepts were assessed: subject-verb agreement, use of connectives, sentence types, homonyms, apostrophes, capitalization, and use of commas. The final section of the Proofreading and Writing Assessment examined the participants' ability to solve a workplace problem which required the completion of Valmont's Safety Hazard Report. Parts one-through-six simply counted all correct responses. Part VII involved a wholistic observation on the employees' thoroughness in completing the form and their ability to apply basic writing skills.

The second part of the writing assessment process involved the participants' written response to a work-related topic. The written samples were scored by Valmont 2000 instructors, using a 5 point wholistic scoring procedure (See Appendix D7). A Level 5 rating denoted a "high pass", while a level 1 rating indicated "no pass". The Level 3 rating suggested a "marginal pass". The writing samples were developed and implemented from training session three through five.

IN-CLASS ASSESSMENT ADMINISTRATION

During the first week of training, an in-class assessment was administered. The post test administered during the final week of training served to measure any improvement in the participants' skills following training.

RESULTS

The results noted on the next page included scores on the pre and post in-class assessments for Valmont employees that completed training in reading, math, and writing. Only those who completed both the pre and post assessments were included. Based upon the data, the following results were observed:

1. Among the 70 individuals that completed both reading assessments, the average score increased from a raw score of 29.0 (48%) to 32.3 (54%).

2. Among the 144 individuals that completed both math assessments, the average score increased from 38.403 (59%) to 59.507 (85%).

4. Among the 250 individuals that completed both writing assessments, the average score increased from 27.42 (49%) to 36.912 (70%).

5. Among the 159 individuals that completed both essay assessments, the average score increased from a mean level of 2.40 (Marginal No Pass) to 3.02 (Marginal Pass).

At the request of Valmont personnel, the in-class assessment scores were also broken down by division.

In-Class Assessments
September 15, 1994

PRE AND POST IN CLASS ASSESSMENTS FOR VALMONT EMPLOYEES WHO HAVE COMPLETED TRAINING IN READING

(n=70)

	Average	Standard Deviation
Reading Pre-Test Scores	29.014/60 (48%)	16.628
Reading Post Test Scores	32.300/60 (54%)	16.734

PRE AND POST IN CLASS ASSESSMENTS FOR VALMONT EMPLOYEES WHO HAVE COMPLETED TRAINING IN MATH

(n=144)

	Average	Standard Deviation
Math Pre-Test Scores	38.403/65 (59%)	13.041
Math Post Test Scores	59.507/70 (85%)	11.361

PRE AND POST IN CLASS ASSESSMENTS FOR VALMONT EMPLOYEES WHO HAVE COMPLETED TRAINING IN WRITING

(n=250)

	Average	Standard Deviation
Writing Pre-Test Scores	27.420/56 (49%)	10.811
Writing Post Test Scores	36.912/53 (70%)	7.765

NOTE:

[1] The number of in-class assessment is lower than the number of TABE because some individuals missed the pre or post test.

[2] The above data is updated through the completion of the fifth session (August 29, 1994).

PRE AND POST IN CLASS ASSESSMENTS FOR VALMONT EMPLOYEES WHO HAVE COMPLETED TRAINING IN READING IRRIGATION

(n=47)

	Average	Standard Deviation
Reading Pre-Test Scores	26.723/60 (44%)	16.166
Reading Post Test Scores	29.617/60 (49%)	16.821

PRE AND POST IN CLASS ASSESSMENTS FOR VALMONT EMPLOYEES WHO HAVE COMPLETED TRAINING IN MATH IRRIGATION

(n=70)

	Average	Standard Deviation
Math Pre-Test Scores	37.543/65 (58%)	13.323
Math Post Test Scores	59.157/70 (85%)	12.338

PRE AND POST IN CLASS ASSESSMENTS FOR VALMONT EMPLOYEES WHO HAVE COMPLETED TRAINING IN WRITING IRRIGATION

(n=142)

	Average	Standard Deviation
Writing Pre-Test Scores	26.423/56 (47%)	10.997
Writing Post Test Scores	35.830/53 (68%)	8.025

PRE AND POST IN CLASS ASSESSMENTS FOR VALMONT EMPLOYEES WHO HAVE COMPLETED TRAINING IN READING

ICPD

(n=23)

	Average	Standard Deviation
Reading Pre-Test Scores	33.696/60 (56%)	16.929
Reading Post Test Scores	37.783/60 (63%)	15.489

PRE AND POST IN CLASS ASSESSMENTS FOR VALMONT EMPLOYEES WHO HAVE COMPLETED TRAINING IN MATH

ICPD

(n=74)

	Average	Standard Deviation
Math Pre-Test Scores	39.110/65 (60%)	12.862
Math Post Test Scores	59.767/70 (85%)	10.481

PRE AND POST IN CLASS ASSESSMENTS FOR VALMONT EMPLOYEES WHO HAVE COMPLETED TRAINING IN WRITING

ICPD

(n=108)

	Average	Standard Deviation
Writing Pre-Test Scores	28.810/56 (51%)	10.549
Writing Post Test Scores	38.457/53 (73%)	7.188

CONCLUSIONS

Similar to the TABE scores, there is a significant increase among the in-class assessment scores for reading, math, and writing. Again, the increases are considerably greater after training in math and writing. Much speculation has been given to why post score improvement is consistently larger for math and writing regardless of the measure. This information will no doubt be beneficial in future curriculum development.

LEVEL 3: STUDENT PERFORMANCE

This level evaluates the employees' performance on-the-job, following training. For the purposes of this report, we shall discuss the results of the Supervisor Survey (See Appendix D8).

Summary Report of Supervisor Survey

The supervisor survey was developed by Valmont 2000 staff with the assistance of two Valmont supervisors. Its purpose was to assess the opinions of supervisors and lead persons concerning the Valmont 2000 project. In July, 1994, the Survey was distributed to all supervisors and lead persons who had one or more of their employees complete Valmont 2000 training at the completion of the fourth training session.

The survey included four sections. The first section asked respondents to identify improvements in their employees' reading, writing, and math skills as a result of training. The second section questioned various work related skills such as filling out forms and using E-mail to communicate. The third section included general questions such as interest in outside education, employee morale, their overall impressions, and the willingness of employees to share their opinions about Valmont 2000 training. Finally, the fourth section provided respondents with an opportunity to share their opinions of the Valmont 2000 project and to provide suggestions concerning how the project could be improved.

This summary report provides response averages for each survey question and averages for certain types of questions combined. It also includes a review of the supervisors and lead persons' narrative responses. Some tentative conclusions are provided.

DEMOGRAPHICS

Eleven of the respondents were supervisors, and 36 were lead persons. The average age of the respondents was 41.4 years. A majority of the respondents were long-time Valmont employees with 35 of them employed at Valmont for at least 16 years.

Survey Response Averages

Among the 70 surveys sent, 47 were returned completed (67%). The average responses for all 47 supervisors and lead persons are recorded here for each of the survey questions. A copy of the survey is provided.

TABLE 1: MEAN RESPONSE OF SURVEY RESPONDENTS (N=47)

Question	Average	Question	Average
1	2.9	16	2.3
2	1.3	17	1.7
3	1.2	18	1.9
4	2.8	19	1.9
5	1.4	20	1.5
6	1.4	21	1.2
7	3.0	22	2.4
8	1.5	23	2.0
9	1.6	24	2.0
10	2.0	25	1.9
11	2.3	26	2.7
12	2.5	27	2.0
13	2.3	28	2.8
14	2.5	29	2.8
15	2.6		

Further response averages are worth noting when certain questions are combined. For example, questions 1, 4, and 7 ask whether or not the respondents agree or disagree that Valmont 2000 has improved reading, writing, or math skills of employees. The average response was a relatively high 2.9 on a five-point scale. Since 3.0 translates to "Neither Agreeing Nor Disagreeing", the responses were essentially non-committal.

Questions 2, 3, 5, 6, 8, 9, and 20 ask supervisors and lead persons to identify actual observations of performance improvements. The response average, was 1.4, which indicated that very few examples of improved performance were observed by the supervisors or leadmen. In fact, none of the respondents reported observing more than two examples of improved performance related to the Valmont 2000 training.

Questions 10 thru 19 asked respondents to rate, on a five-point scale, any improved work related skills. The average response for this section was 2.2. The results suggested that some improvement may have occurred, but it was difficult for respondents to tell for certain.

RESULTS OF THE RESPONDENTS' NARRATIVE RESPONSE

Part four contained four questions which required that the respondents give a detailed, written response. Among the 47 respondents, 43 responded to at least one of the narrative questions. The responses varied in length, detail, and support.

Question 30 asked the respondents to cite examples that suggested application of training by Valmont 2000 participants. The responses to this question were minimal. Only two respondents provided examples (Both were related to E-mail use).

Question 31 asked if attending classes labeled some employees as "smart" or "dumb". Very few responses went beyond a simple yes or no. Among the 37 individuals that gave a response to this question, 28 reported "No Problem"; however, nine felt it was a problem. Among those who reported a problem with employees being labeled as "smart" or "dumb", the majority reported the problem as minor. One supervisor and lead person felt this was a critical issue, and they were concerned for those labeled as "dumb".

Question 32 asked for comments concerning disruptions to the work schedule caused by Valmont 2000 activities and suggestions on how to do a better job of scheduling were requested. The responses to this question were by far the most detailed and lengthy. Twenty-three respondents voiced their concerns about being "left short-handed" or that "production suffered".

Question 33 asked for the respondents suggestions on how Valmont 2000 could be improved. Responses here included:

- "Further more effective counseling of test scores"
- "Classes only on a voluntary basis"
- "More assurance that Valmont 2000 scores are private and won't hurt in the future."
- "More needs to be done to encourage a positive attitude about the program."
- "Reevaluate what employees really need to do their jobs."
- "Training needs to be more individualized."
- "Better communication concerning scheduling"
- "Too early to tell"
- "TABE test should be related more to job."
- "Use military time."
- "Classes should occur on own time."
- "Employees should only be scheduled for one class per session."
- "Don't schedule in the middle of a shift."

CONCLUSIONS

Based upon the survey results, the following conclusions were offered:

1. The results of the Valmont 2000 Supervisor Survey made it clear that production disruptions were a main concern among supervisors and lead persons. It should be noted that Department Supervisors were heavily involved with the scheduling process because they have knowledge of the production schedule and manpower needs. The Valmont 2000 staff have often reminded the supervisors to "feel free" retaining employees as the need arose. It seems that this area of concern needs further attention to keep production disruptions to a minimum. Otherwise, such disruptions could hinder employee morale and damage future training efforts.

2. The employee's level of self-esteem remains a primary concern when training is involved-not only to him/her personally but perceptions from others. Perhaps more efficient strategies should be made to market programs like Valmont 2000 before implementation.

3. The application of Valmont 2000 training to the employee's job was a primary goal of this program. The limited number of examples provided by the respondents may be due to several factors. The first involves the relevancy of the curriculum to the task required by the employees. Another factor to consider is the respondents' knowledge of the Valmont 2000 training program objectives and what specific behaviors should be observed on the shop floor. A third consideration is the time frame given the respondents to observe any behavioral changes. Perhaps more time was needed to allow employees to "practice" using the skills. Finally the responses were highly dependent upon the respondent's opportunity to observe and remember instances where a particular behavior occurred. One method of assisting their observation skills would be setting specific observation periods (e.g., 3 days per week). Apparently more thought will be necessary to lessen the effect of these variables.

4. The suggestions offered by the respondents have been addressed at some point in time within the grant period. Obviously, more efforts should be directed to soliciting feedback from all concerned.

LEVEL FOUR: ORGANIZATIONAL RESULTS

As noted by the proponents of the Workplace Learning Evaluation model, this level examines the effect of the Valmont 2000 Training Program on the organization (Valmont Industries, Inc.) For our purpose, an analysis of the key company indicators, the worker's perception of their commitment to the company, and the participants' level of job satisfaction were measures used to ascertain the program's effects, if any. Our discussion will focus on the aforementioned variables.

EVALUATION OF KEY COMPANY INDICATORS

When assessing the value of an employee based training program, it is important to identify organizational indicators that could be enhanced by training. Key indicators such as productivity, quality, safety, absenteeism, turnover, and tuition reimbursement could all potentially help measure the value of a training program.

However, in business and industry, there are many factors that can affect these indicators. These factors can be both internal and external. Examples of internal factors are other training programs, process improvements, turnover, morale, planning, equipment, etc. Some examples of external factors are competition, weather, economic and market fluctuations, etc.

When Valmont 2000 staff requested information on various key company indicators, there was concern expressed by Valmont personnel that Valmont 2000 would be inappropriately identified as being solely responsible for any gains or losses in these various areas. It was noted by Valmont personnel that the previously addressed internal and external factors are likely to contribute to any change in the company indicators. In addition to the large number of confounding variables influencing various key company indicators, the way in which these company indicators are recorded by Valmont presents further difficulties. The information is not reported departmentally. Rather, it is recorded by division, and Valmont 2000 has not provided training to employees from every department within each division at this time.

Keeping in mind the aforementioned limitations, the following company indicators were analyzed with respect to the Valmont 2000 Training program:

1. Information related to productivity (throughput operating numbers),
2. Quality (total dollars for field claims, scrap),
3. Safety (lost work day cases, total cost),
4. Absenteeism,
5. Tuition reimbursement, and
6. Voluntary turnover of regular full-time employees will be reported by division when possible.

Based upon the variables noted above, it was concluded that the impact of the Valmont 2000 training program upon the organization could not be adequately assessed by examining the key company indicators. In addition, it is too early to draw conclusions from the data currently available because the first training session was not completed until January 1994. The data presented in this report will serve as a baseline from which comparisons can be drawn at a later time. However, any trends indicated by the data will be noted.

PRODUCTIVITY

(throughput operating numbers)

Valmont's primary measure of productivity is throughput divided by operating expenses (TP/OE). Simply put, this is the value of production divided by the total operating expenses. This measure of productivity is calculated on a monthly basis. It is also analyzed over 3 month, 12 month, and 24 month periods. The productivity figures for the Irrigation Division from January 1993 to March 1994 are listed below.

VALUE OF PRODUCTION/TOTAL EXPENSE RATIO

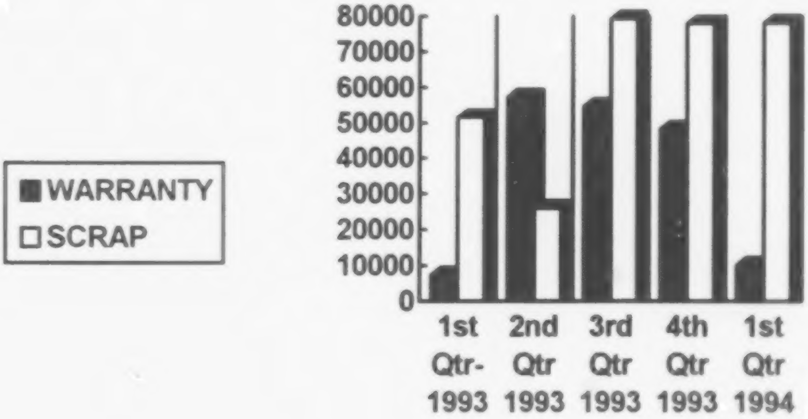
		MONTHLY RATE	3 MONTH AVERAGE	12 MONTH AVERAGE	24 MONTH AVERAGE
1993	January	$0.9932	$1.2223	$1.3873	$1.3023
"	February	$1.3611	$1.3298	$1.4001	$1.3095
"	March	$1.8860	$1.4229	$1.4077	$1.3179
"	April	$1.7611	$1.6481	$1.4192	$1.3209
"	May	$1.5039	$1.7146	$1.2904	$1.3144
"	June	$1.3766	$1.5666	$1.3807	$1.3203
"	July	$1.2352	$1.3850	$1.3777	$1.3229
"	August	$1.1421	$1.2336	$1.3807	$1.3310
"	September	$1.2013	$1.1878	$1.3662	$1.3357
"	October	$1.2436	$1.1937	$1.3733	$1.3467
"	November	$1.4190	$1.2982	$1.4021	$1.3710
"	December	$1.5545	$1.3992	$1.3942	$1.3896
1994	January*	$1.0992	$1.3442	$1.3979	$1.3929
"	February	$0.9785	$1.1633	$1.3530	$1.3751
"	March	$2.0901	$1.3892	$1.3853	$1.3956

*The first Valmont 2000 training session was completed in January 1994.

QUALITY

(total dollars for field claims, scrap)

Quality can be assessed in many ways. Two ways that Valmont measures quality is total dollars for field claims (represented by warranty claims) and scrap. This information is reported on a quarterly basis by division. The following data is the scrap and warranty dollars incurred during 1993 and the first quarter of 1994 for the Irrigation division.



NOTE: Fluctuation in scrap costs can occur for several reasons besides employee error such as material and equipment variances, and warranty costs fluctuate seasonally.

SAFETY

(lost work day cases, total cost)

Valmont personnel suggested that the best two company indicators related to safety are lost work day cases and total cost. The data listed below contains information about the number of lost work day cases and total cost along with other safety related information. The data is reported on a yearly basis by both Irrigation and ICPD Divisions.

COMPARATIVE ANALYSIS BY DIVISION
YTD Thru December, 1992

IRRIGATION DIVISION	1990*	1991	1992
First Aids	181	119	97+
LWD Cases	36	40	20+
OSHA Rec.	118	111	78+
LW Days	520	565	296+
Self Ins. Costs	$73,192	$209,068	$59,071+
Risk Reduction W/O	91	115	32+
Hazard Reports	502	671	507-
Pos. Reinf. Cards	1027	827	572-
Non-Inj. Inc.	207	163	113+
Non-Inj. Costs	$27,162	$30,307	$8,947+
Total Costs	$108,386	$244,730	$72,383+
Hours Worked	1,188,399	1,235,258	1,221,773+
Cost Per Hour	.10	.20	.06+
LWD Frequency Rate	6.1	6.5	3.27

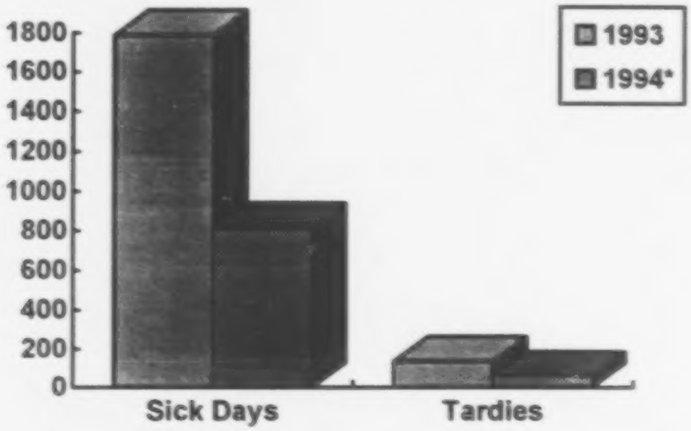
ICPD DIVISION	1990*	1991	1992
First Aids	144	83	74+
LWD Cases	28	25	10+
OSHA Rec.	76	75	51+
LW Days	252	284	63+
Self Ins. Costs	$48,715	$60,097	$45,995+
Risk Reduction W/O	164	166	104+
Hazard Reports	349	356	451+
Pos. Reinf. Cards	594	989	167-
Non-Inj. Inc.	346	270	210+
Non-Inj. Costs	$40,517	$27,010	$20,757+
Total Costs	$95,563	$90,752	$70,082+
Hours Worked	1,130,715	1,087,725	1,116,941+
Cost Per Hour	.09	.08	.06+
LWD Frequency Rate	4.6	4.6	1.8

*Plant Services data was combined with Division Data
*LWD = Lost work day cases

ABSENTEEISM

Absenteeism is reported Valmont wide on a yearly basis. It is represented by the total number sick days and total tardies for shop employees only. The information listed below spans from January 1, 1993, to June 1, 1994.

NOTE: These numbers reflect ICPD and IRRIGATION Only



TUITION REIMBURSEMENT

The number of dollars spent on tuition assistance is reported Valmont wide on a yearly basis. Beginning in 1993, the number of individuals receiving tuition assistance is also reported. The data below includes tuition reimbursement information for all Valmont employees.

DOLLARS FOR TUITION ASSISTANCE

	Number of Employees	Cost
1988	-	14,300
1989	-	33,300
1990	-	46,700
1991	-	43,000
1992	-	34,000
1993	78	45,013
1994 (through April 1, 1994)	49	16,145

TUITION REIMBURSEMENT FOR EMPLOYEES THAT COMPLETED THE VALMONT 2000 TRAINING PROGRAM

Number of Employees	Number of Classes	Total Dollar Reimbursed by Valmont
13	18	$4,215

VOLUNTARY TURNOVER OF REGULAR FULL-TIME EMPLOYEES

Voluntary turnover of regular full-time employees is reported Valmont wide on a quarterly basis. The information listed below identifies the number of regular full-time shop employees who have left Valmont voluntarily from January 1, 1993 to June 1, 1994.

NOTE: THESE NUMBERS REFLECT ICPD AND IRRIGATION ONLY

QUARTER	VOLUNTARY TURNOVER OF REGULAR FULL-TIME SHOP EMPLOYEES
Jan-Mar 1993	10
Apr-June 1993	17
July - Sept. 1993	11
Oct. - Dec 1993	2
*Jan - Mar 1994	7
Apr-June 1, 1994	5

*The first Valmont 2000 Training session was completed in January, 1994

WORKER'S PERCEPTION OF THEIR COMMITMENT TO VALMONT

The data from Worker Perception of Organizational Commitment" section of the Multi-Purpose Survey were used to examine the effect of Valmont 2000 training on the participant's loyalty to the organization. This scale asked the participants to rate the level of agreement with 15 positively worded statements. This information was gathered prior to the initial TABE testing, following the TABE Test Review Sessions (TTRS), and at the culmination of training. The table below summarizes the ratings of all participants during the three time periods.

COMBINED AVERAGE RATINGS OF ALL PARTICIPANTS

Time of Measure	All Participants Combined Average Rating	Number Responding
Entry into program	5.18	437
Following Counseling	5.25	425
Following Training	4.97	488

Although this mean rating was lower following training, the participants' responses suggest commitment to the company. In addition, the mean rating, in all areas, may be affected by other variables besides Valmont 2000 training.

The employees' level of job satisfaction was also gleaned from the MPS. However, a sentence format was used rather than a Likert Scale. As a result more variance was noted between administration times. A comparison of the different administrations suggested that the participants' were generally satisfied with their job. The mean ratings were 4.86, 4.88, and 4.90 respectively.

As noted earlier, the use of the aforementioned key company indicators to evaluate the effects of training may be inappropriate, due to the presence of company training initiatives in other areas, market conditions, safety programs, profit sharing programs, and other factors too numerous to mention in this report. On the other hand, specific data on tuition reimbursement of past participants and attitudinal surveys may provide more relevant information. Further studies into other assessment strategies are warranted.

LEVEL FIVE: INSTRUCTORS' REACTION TO VALMONT 2000

This level of program evaluation concentrates on the Valmont 2000 instructors' reaction to the various components of the program. The following discussion will provide a description of the Instructor Survey (See Appendix D9) and highlight the survey results.

DESCRIPTION OF SURVEY

The Instructor Survey consisted of 24 questions across four general areas. These areas included an assessment of the curriculum, evaluation, measures, administrative procedures, and miscellaneous concerns (e.g., strengths/weaknesses, level of Valmont's commitment, etc.).

DESCRIPTION OF THE CURRICULUM

Part I of the survey asked the instructors to give their opinions on the curriculum. They were asked specific questions concerning:

1. Instructional materials (textbooks, learning guides, and workplace problems).
2. The Interactive Video Program.
3. The Individualized Education/Career Plan (IEP).
4. Data Transmittal Sheets (DTS) and Required Competencies for the Jobs (RCJ) reports from the job analysis.

The chief instructional materials included textbooks, learning guides, and workplace problems. Initially, the Paradigm Publisher's Basic Skills Series: Reading, Writing, Math for Workplace Success comprised the core of the curriculum, but eventually became supplemental to the Valmont-related material. (For the purposes of the report, the titles of the series were combined. Actually, there was a separate title for each content area.)

Learning guides were composed of selected commercial materials and materials developed by Valmont 2000 staff/MCC curriculum consultants. These guides concentrated on specific basic skill areas (e.g., whole number computation, use of joining words, or detecting main ideas, etc.). Workplace problems were developed to allow students practice in applying their basic skills to job related issues. Workplace problems were Valmont-related material similar in style and format those in the textbooks. These items were incorporated throughout the training classes. Valmont-specific problems were continually developed by the class participants and the instructors.

The Beyond Words Interactive Video program (Glencoe, 1992) was also used as a supplement to instruction. The program contains 41 video-laser disks which concentrated on math, language, and reading. Beyond Words may be used by an employee to "brush up" on his/her skills or to work toward a G.E.D.

The IEP/Career plan, the Data Transmittal Sheets (DTS), and the Required Competencies for the Job (RCJ) were used to plan instruction and to inform participants of their academic deficiencies, as related to the job and to inform them of the training classes needed. The DTS and the RCJ were developed as a result of the job analyses.

SUMMARY OF PART ONE SURVEY RESULTS:

The instructor's overall response regarding the curriculum was positive. They felt the curriculum was responsive to the needs of the instructor and the learner; however, improvements were suggested. The following observations were made:

1.	Textbooks:	The reading and writing textbooks were good references, but the math textbook was not as efficient. The general scope of the book was not relevant for shop floor employees.
2.	Learning Guides:	They were effective instructional materials, but some revision was indicated.
3.	Work problems:	The most appreciated portion of the curriculum was developed by the employees. It was suggested that they should be the focal point of the curriculum.
4.	Interactive Video:	It was viewed as a valuable supplement to the instructional program, when it was in operating condition. Several instructors recommended more staff training to learn how to integrate it into their instruction.
5.	IEP/Career Plan:	It was considered a very effective tool when completed properly. Suggestions were made to provide feedback to the counselors.
6.	DTS/RJC:	The instructors felt the DTS, RJC provided a "good" overview of the job requirements, but weren't quite sure how to use it. There also were concerns regarding discrepancies noted by the class participants and the job analysis report.
7.	Supplies:	The overall opinion was that the availability of supplies was adequate. However, the supplies were not always available in the satellite classrooms.

SUMMARY OF PART TWO STUDENT EVALUATION:

Part II of the survey asked instructors to give their opinion on the various student evaluation measures. The assessment tools were previously described under the section entitled: Student Performance.

The instructors' responses rated the informal in class assessments from fair to good. Many of them felt that the informal reading and writing in class assessments were more valid than the informal writing test. Therefore, revisions were indicated. However, all of the instructors felt that the assessments were necessary to rate the participants' progress.

The instructors' felt that the TABE test was more valid as a pretest (to identify the employees' deficiencies) than as a posttest. On the other hand, the midterm assessments appeared to have more meaning to the employees by illustrating their progress in the course. Also, the instructors noted that the midterms allowed participants to "test-out" early. Testing-out early means the employee met the required competencies for their respective job prior to the end of the training session.

SUMMARY OF PART THREE: ADMINISTRATION

Part Three of the survey asked instructors to give their opinions about the program's administrative procedures. The respondents provided their impressions of the staff evaluation procedures, class scheduling, the student instructor ratio, the responsiveness of the administrators to the their needs, and student training.

The staff evaluation involved a "360° evaluation process". The 360° evaluation process included an instructor self-assessment, a peer evaluation, an evaluation by the teacher-assistant, a MCC Student Evaluation, and a supervisor's evaluation which included a 45-minute videotape of each instructor. These evaluations were conduction at least once-per-training session. If there were any concerns, a follow-up classroom visit was conducted.

The range of responses were "very effective" to "overdone". A majority of the instructors felt that the effectiveness of the evaluation was compromised due to its frequency of the evaluations. Moreover, they noted that the videotaping tended to interfere with the class routine.

SCHEDULING

Most of the comments centered on the "excellent job" the secretary did on schedule development. The instructors also reported that the training participants felt "guilty" attending in class while their peers were left to "fill the void" during their absence. The instructors recommended revising the scheduling process. As noted earlier in this report, supervisors were involved in the scheduling process and had been advised to use their discretion in sending employees to training during high production demands.

INSTRUCTOR-STUDENT RATIO

Instructors indicated a strong preference for smaller class sizes. However, if the classes were large, the placement of teacher-assistants was crucial. All of the instructors were concerned with the wide range of ability levels displayed among the training participants. They suggested a more homogeneous grouping, if possible.

RESPONSIVENESS OF ADMINISTRATIVE STAFF

Most of the instructors felt that the administrators were "very responsive" to their needs but some improvement was needed to improve communication. However, the faculty meetings were believed to be "very helpful" and informative. The instructors viewed the faculty meetings as a vehicle to share ideas and encourage each other.

IMPACT OF TRAINING

The instructors reported indices of increased student self-esteem. They also noted that after participating in the training most of the employees who initially held negative opinions of the program had positive attitudinal changes. The instructors also noted that several training participants, encouraged by their performance, chose to continue their education (usually at MCC).

SUMMARY OF PART IV: MISCELLANEOUS

This section of the survey asked the instructors' opinions about the strengths of the program, Valmont and Metro's level of commitment to Valmont 2000, the effectiveness of staff training, and recommendations to improve the program.

STRENGTHS OF THE VALMONT 2000 PROGRAM

The following is a list of instructors' comments:

1. The program increased the self-esteem of the participants.
2. The Valmont specific workplace problems were central to the training program.
3. Overall, the curriculum was responsive to the needs of the learner and instructors.
4. The work environment was positive because of responsive administrative staff and a caring staff.
5. A low student-instructor ratio and the use of Teacher-Assistants in larger classes were beneficial to the program.
6. The high level of commitment of Valmont and MCC to the Valmont 2000 program.

AREAS IN NEED OF IMPROVEMENT

1. Reduce the number of staff evaluations.
2. Revise the curriculum to include more work-based problems.
3. Provide more opportunities for staff development.
4. Develop or incorporate an existing MCC program for lower level readers.
5. If possible, keep class size smaller or homogeneously group them according to their ability levels.
6. Provide more information to supervisors and lead men about the importance of a training workforce for their department.

Part 1: Program Parameters:

1. Target No. to be served: 350

4. Fed. Funds Obligated: 270,837

5. Matching Funds/In-Kind: 47,471

6. Value Release Time: 283,500

2. No. Served at Each Site to Date:

7. No. Participating in Programs Offered:

Site 1.	_507__	Site 6.	____
Site 2.	_____	Site 7.	____
Site 3.	_____	Site 8.	____
Site 4.	_____	Site 9.	____
Site 5.	_____	Site 10.	____

3. Total No. Served: _448_____

Basic Skills __725__
GED ____________
ESL ____________

8. Contact Hours Provided: __12,168_____

(Contact Hours are the number of teaching hours that workers receive)

Part 2: Participation Data

1. Mean Age Participants: __37.467

2. Sex: No. Males _420___ No. Females _28___

3. Race/Ethnicity: No. who are:

White __424__ Am. Indian/
Black __7___ Alaska Native_3/0_
Hispanic _6___ Asian/Pacific
Islander __1____
Other__7__

4. No. Single Head of Household: __172______

5. No. Limited English Proficient: ___3______

6. Outcomes	No. Participants
a. tested higher on basic skills	_*__
b. Improved Communication skills	_*__
c. Increased productivity	_*__
d. Improved attendance at work	_*__
e. Increased self-esteem	_*__

7. Years with Company	No. Participants
Unemployed	_0___
0-5 years	_133_
6-10 years	_68__
11-15 years	__88_
16 - over	_159_

E. Dissemination Activities

E. DISSEMINATION ACTIVITIES

Information regarding Valmont 2000 was disseminated to Valmont employees, local community groups, University-affiliated personnel, and professional association conventions. The information below provides a list of dissemination activities. The reader is advised to refer to Appendix E which contains samples of handouts provided during these activities.

List of Valmont 2000 Dissemination Activities

1. Valmont Management and employees (See Appendix E1)
2. Fremont 2000 Presentation (See Appendix E2)
3. ASTD of Omaha Presentation (See Appendix E3)
4. 1994 American Psychological Association Workshop (See Appendix E4)
5. Midwestern Psychological Association (See Appendix E5)
6. University of Nebraska at Omaha - Industrial/Organizational Psychology Class (See Appendix E6)
7. Omaha 2000 Presentation (See Appendix E7)
8. University of Nebraska - Lincoln Literacy Presentation (See Appendix E8)
9. University of Nebraska - Omaha Training and Development Class (See Appendix E9)
10. Altrusa Club (See Appendix E10)
11. ADA - Learning Disabilities Presentation (See Appendix E11)
12. Fremont Area Teachers (See Appendix E12)
13. Coalition for Adult Literacy of the State of Nebraska (See Appendix E13)
14. Projected: 1995 Annual Conference League of Innovations in Community Colleges
15. ERIC Clearinghouse on Adult, Career and Vocational Education

F. Summary of Project

Metropolitan Community College and Valmont Industries, Inc. received a $270,837 grant from the U.S. Department of Education Office of Vocational and Adult Education to help fund a project titled ***Valmont 2000: Workplace Literacy for Life-Long Learning.*** The College and Valmont entered into a business/education partnership to create a workplace development program designed to prepare workers to meet specific job educational requirements.

The activities of the ***Valmont 2000*** project center around 11 project objectives which address existing and future workforce education requirements and directly relate to the ***America 2000*** and ***Nebraska 2000*** stated goal: ***Every adult American will be literate and will possess the knowledge and skills necessary to compete in a global economy and exercise the rights and responsibilities of citizenship."***

This partnership, through a comprehensive program of assessment, performance-based curriculum development, job-based literacy instruction, and program evaluation provided a unique educational opportunity for both Valmont employees and the communities in which they live.

Funds from the grant were received over an 18 months period, beginning to March 1, 1993. The grant which extended through August 1994, required a combination of non-federal matching funds and in-kind cost sharing of $475,713; with $12,471 from Metropolitan Community College and $463,242 from Valmont Industries. The total project is valued at $746,550.

The project was designed to benefit more than 350 Valmont employees in Valley, Nebraska and become a model to be replicated at other businesses. ***Valmont 2000*** provided comprehensive employee skill assessments, individualized learning plans, job task/literacy analyses, performance based curricula, academic advising, mentoring, tutoring programs and a ***Valmont 2000*** Employee Development Center.

While MCC was the fiscal agent for the grant, the daily functions of the project were located at the Valmont facility in Valley, Nebraska.

A Project Coordinator, Margaret L. Durr, Ph.D., a Project Instructor, Kenneth M. Jones, Ed.D, and a Project Secretary, Hope Songster were hired as the full-time staff. A Job Analyst, Vernon A. Peterson, Ph.D. was hired on a part-time basis. Additional part-time instructors and counselors were hired, as were the positions of Teacher-Assistants. Most activities involved Valmont employees during their normal working hours.

The attached is a detailed report of each objective and the program's accomplishments and recommendations for the future.

OBJECTIVE 1: To provide through August, 1994, an effective plan of management to ensure the proper and efficient management of the Valmont 2000 (Workplace Literacy) Program.

Margaret L. Durr, Ph.D. was hired in March 1993 to direct the Valmont 2000 project. Margaret maintained her position until her resignation in July, 1994. During her tenure at Valmont 2000, Margaret was responsible for the selection of the Valmont 2000 staff. Under her selection, Vernon Peterson was hired on May 3, 1993 as the Job Analyst for the Valmont 2000 project. Dr. Peterson resigned his position with the project in February, 1994, to accept a consulting position. Before that time, Dr. Peterson had worked with the University of Nebraska at Omaha to extend a training practicum for interns in the Industrial/Organizational Psychology Department. Three interns served with the program for a limited amount of time. They were Kevin Spier, Cheryl Hendrickson, and Stephanie Armstrong. Kevin and Stephanie were later offered positions within the program to complete the job analysis remaining after Dr. Peterson's departure from the program.

Dr. Ken Jones was hired in June of 1993, to the position of Full-Time Instructor. Dr. Jones assisted Dr. Durr in the hiring of the Part-Time Instructors and was responsible for the development and implementation of the Valmont-specific curriculum. Part-Time Instructors hired for the project included Nancy Conrad, Karin Hjerpstedt, Martha Turner, Judith Jennum, Diane Hocevar, Marita Hahn, Judy Richards, Terry Heany, Cindy Stover, Joan Walsh and Sandra Hunter. Several of the Part-Time Instructors currently remain on staff completing training classes at Valmont Industries. Also under Dr. Jones' responsibilities was developing the curriculum for the program. To this end, he worked with MCC Curriculum Specialists, Cliff Wakeman, Juie Richardson and Terry Gibson. With their assistance, the first pilot class began in September of 1993. Part-Time Instructors during the training classes made note of suggested changes to improve the curriculum.

Dr. Durr with the assistance of Metropolitan Community Colleges' Special Needs Program Coordinator, Mark Carta, interviewed and hired the initial Counselors for the Valmont 2000 Project in July of 1993. The Counselors included: Ralph Ekwall, Melanee Peterson, Maggie Dawson, Donna Billesbach, Judy Richards, and Beth Nimmo. These individuals worked varying hours on all shifts to provide counseling and assessment testing to the incumbents of the selected jobs.

The Tutoring/Teaching Assistant Program was developed in February of 1994. The Teacher-Assistants hired for the program were: Bess Turner, Conrad Decorazina, Jolene Schauer, Nick Carter, Melanie Shaw, Robin Olson, Becky Michaels, Diane Safford, Tera Hocevar and Jennifer Zakovec. Although hours were sporadic and on varied shifts, several of the teacher-assistants remain with the program, actively meeting the students training needs.

The Valmont 2000 Project was aided by the Valmont Management Task Force consisting of Steve Narans, Whit Bonifant, Tom Whalen, Dennis Thome, Kirby Sullivan, Vanessa Brown, Vince Curso, Joe Goecke, Lew Hays and Mogens Bay, Valmont CEO. Meetings of this executive committee were held weekly during the initial six months of the grant, and bi-monthly during the last 12 months of the grant period.

Also heavily involved in the Valmont 2000 project were Metropolitan Community College personnel, Larry Lindberg (Counseling Division Chair), Mark Carta (Coordinator of Special Needs), Jolene Medley (Grants Development Coordinator), Mary Hawkins (Vice President Educational Affairs) and as well as other MCC personnel.

Orientation for all staff was completed within the first week of their employment with the project. An orientation handbook detailing the procedures and practices of the Valmont 2000 project was given to each employee. This handbook was reviewed and updated quarterly at meetings by staff. All staff participated in three full day training sessions held in the Valmont 2000 Classroom.

During the development of the Valmont 2000 Task Force, it became apparent that shop floor workers needed representation on the Task Force. To this end, a member of the shop floor was given an ad-hoc position on the Task Force. Also, several shop floor employees presented views and suggestions to the Task Force either in person or by written suggestion. These suggestions were critical in the implementation of the training classes, Mentoring Program and the inclusion of the E-Mail system within the Reading and Writing curriculum.

During the first six months of implementation, weekly updates were E-mailed to all shop employees. These memos addressed employees questions and suggestions regarding the implementation of the project. Several of the employee's suggestions were implemented, and to their credit, enhanced the program. This marketing campaign, also included Dr. Durr speaking at Safety, and Department Meetings. Also, instructors were encouraged to tour areas where their students were working, to enhance the visibility and reputation of the Valmont 2000 project and its staff.

The MCC Accounting Department with the assistance of the Project Director and Secretary maintained program budget records. To better facilitate the use of the funds, detailed payroll records were maintained at the Valmont 2000 site. This enabled the Project Director to set limitations on payroll hour usage and control the overall fund usage of the project.

External Evaluator, Patricia Halverson, visited the Valmont 2000 Site four times during the grant period. A copy of her detailed reports are available in Appendix F1. Feedback from her observations were implemented within a timely manner.

OBJECTIVE 2: ***To recruit and enroll through the 18 month project period, 350 participants and to provide 100% of the participants workplace literacy skill development activities and services to ensure attainment of literacy and other workplace basic skills essential to successful placement, continued employment, advancement in careers, and increased productivity.***

In order to attain success in all of the grant objectives, Action Teams were established in the following areas: Evaluation/Final Report, Distance Learning, Mentoring, Tutor/Teacher-Assistant, Orientation Video, and Future Recommendations. These action teams consisted of both Valmont Management personnel and Valmont 2000 Part-Time and Full-Time staff. By empowering each of these teams to set and obtain their goals, it allowed the employees to become additionally involved in the project, enhanced their understanding of the complete project and improved their ability to present the program, as well as providing additional avenues for suggestions and improvement.

One outcome of the action teams, was the hiring of JoAnne Woleben, a student from University of Nebraska at Omaha. JoAnne created and implemented the Mentoring Program at Valmont 2000.
After the completion of the Mentoring Training, JoAnne also assisted with the completion of the remaining Job Analysis profiles.

As requested by Valmont Management, all employees were informed that their participation was mandatory, pending assessment reulsting indicated non-mastery of an academic skill related to their respective jobs. Employees were identified for skill upgrading at the TABE Test Results Sessions which were held with the Valmont 2000 Counselors. Employees were notified of class openings via written and oral communication methods. Of the 25 jobs which were analyzed, 448 shop production employees were administered the TABE test. In the 25 jobs analyzed, 7 individuals have not had the opportunity for assessment testing. These individuals are currently scheduled for testing after the grant period. Their absence from TABE testing sessions have been a result of increased production needs. Several management personnel also participated in TABE testing as an effort to provide support for the project. After the scoring of the TABE tests, Dr. Ken Jones would review each file with the Counselors to determine class needs and additional testing requirements. At this meeting, the IEP (Individual Education/Career Plan) is begun. The Counselor made note of any areas requiring skill upgrading. During the TTRS with the employee, the Counselor reviews this information and offers suggestions for improvement. Following the Results Session, the student's name is placed on a master list for any classes required to upgrade skills to the minimum level required by their job classification. A student may be enrolled in one, two or three classes.

Employees are encouraged at the Results Session to review materials provided regarding completion of the their GED requirements, if needed. Periodically, throughout the grant period, information was E-mailed to all the Valmont employees to inform them of the steps to obtain their GED. Problem Solving and Critical Thinking Skills have been included into the Curriculum which is presented during the Reading, Writing and Math classes. At the Valmont 2000 site, three ESL students were identified, however, each of these students had a satisfactory comprehension of English and did not require any additional skill development. At any time during the Assessment, Results Session Meetings, Training or after skill development completion, the Valmont 2000 Counselors were available to shop floor employees by making an appointment with the Project Secretary. Several students were referred to other Metropolitan Community College Departments for services beyond the scope of the Valmont 2000 project.

OBJECTIVE 3: ***Conduct job task/literacy analysis for 25 jobs in the 12 job groups to determine needed workplace basic skills training/needed curriculum adjustments per designated job task area in ongoing process through August 1994.***

Dr. Vernon Peterson adapted the job analysis procedure to enhance the outcome, enabling the Project to better determine the skill requirements of the job (See Appendix F2). This 11-step job analysis process was completed on 25 jobs within Valmont Industries, Inc. Job Analysis was completed on all jobs by May, 1994. Upon Dr. Peterson's departure from the program, the remaining job analysis were completed by Kevin Spier, Stephanie Armstrong and JoAnne Woleben (See Appendix F3). This enabled employees from all jobs to be tested and enrolled in classes before the end of the grant period. An outcome of the job analysis was a minimum standard (See Appendix F4) for Valmont employees. This standard was determined at the request of Valmont Management.

A distinct problem which arose within the job analysis portion of the project was the need to review and update the Data Transmittal Sheets previously completed by Metropolitan Community College. These data transmittal updates accounted for hundreds of hours of both clerical and analyst time. Valmont 2000 shouldered the time and expense of reviewing and updating these reports, causing an overage in the budget for the Job Analysis.

OBJECTIVE 4: ***Design and implement through August, 1994, individualized learning plans for 100% of Valmont employees with identified deficits to bridge the gaps found between literacy skills of employees and on-the-job requirements.***

During the course of the grant period, six training sessions were held to enable employees to attend classes at varying times, thus impacting production minimally. Ninety classes were offered during this period. Supervisors were instrumental in determining the schedule of classes, based on their knowledge of production needs. With the Project Secretary, the Department Supervisors selected individuals for class participation based on job description and available coverage on the shop floor. By varying hours and days of class schedules, more students were allowed to attend during each session, thus increasing the number of students participating in basic skills classes.

All training classes were scheduled during the employees' regular shift. If an employee was moved from one shift to another, they were transferred into a different class on their shift, thus allowing them to continue the training process.

OBJECTIVE 5: ***To develop and provide through August 1994, performance based workplace specific bask skills/literacy training curriculum based upon job task analysis and cooperatively planned by Valmont employees and Valmont 2000 project staff.***

Dr. Ken Jones and the part-time instructors developed the Valmont-specific curriculum for Reading, Writing and Math (See Appendix F5). This curriculum was redefined following the pilot and first two regular sessions. By reshaping the curriculum, the program was able to produce a self-paced Valmont-specific curriculum based on both job observations, the job analysis, and employee input. The curriculum developed was then reviewed by the Metropolitan Community College Curriculum Consultants, and made available for the final three sessions.

The curriculum included using the Interactive Video system for learning, the presentation of E-Mail training by Valmont staff, and hands on academic work to develop the students use of actual Valmont forms and situations. When needed, the Literacy Instructors would make arrangements for Teacher-Assistants to work with the class participants on an individual basis to review and improve understanding of the finer points of the curriculum on a one-to-one basis. The Teacher-Assistants provided the added support to enable the Instructors to continue providing instruction to the majority of students, while the Teacher-Assistants worked on an individual basis with students who had fallen behind due to production needs, illness, or vacation. This enabled 95% of all students enrolled in class to complete it within the first session they were enrolled.

Through request and approval of the U.S. Department of Education, the Objective 5.2 which required a Dacum consultant to develop competency-based curriculum was altered to allow for the development of the Mentoring Program. This program was developed by JoAnne Woleben, a student from University of Nebraska at Omaha. The program was very successful at Valmont. The program identified mentors for the program, and developed a handbook for all mentors and supervisors. This handbook (See Appendix F6) offered an initial source of answers to possible questions. As reported earlier in this document, the Mentoring Program Evaluation pointed to the success of the program.

All students enrolled in the Valmont 2000 project were registered with Metropolitan Community College as a current student, as well as, within a database at the Valmont 2000 site. The registration at Metro allowed students to record their success in the Basic Skills programs with a percentage grade. The requirement for successful completion of the course was 80% or better. The database on-site, tracked the students both by class type and session dates. This allowed for ease in scheduling employees whose course requirements had not yet been fulfilled.

Under the direction of Dr. Margaret Durr, the Orientation Video Action Team, along with the assistance of Valmont's management and employees, developed a very detailed and informative video. This video has been utilized in the Valmont 2000 training classes, as well as, a media presentation for dissemination activities.

OBJECTIVE 6: ***To provide through August 1994, Valmont 2000 instructional support services and activities through the Valmont Development Center for 350 of Valmont 2000 participants.***

Over the course of the grant period, 448 individuals were given the TABE test and had TABE Test result sessions with the Valmont 2000 counselors. Of this number, 387 individuals were identified for classes. During the grant period, 369 were given the opportunity to attend one or more classes. Of the 18 individuals who were not included in classes, 16 were in departments in which production needs required their attendance in classes be postponed until a later date, one individual terminated from Valmont after his TABE testing, and one individual transferred into a new position which the job analysis has yet to be completed on.

The Full-Time Instructor, Ken Jones, Ed.D. and the Part-Time instructors built a curriculum based on the Valmont forms and problems. This allowed the employees to learn basic skills utilizing Valmont specific jargon and problem solving techniques. The Interactive Video system was used extensively with students who reached a learning plateau, or those students who required additional review not available in the curriculum.

The Employee Mentoring program, as previously stated was very successful with both the employees and the mentors themselves. This program added to both the marketing plan and the evaluation processes.

Tutoring was available for all class participants, as was counseling. Referrals to the Special Needs program at Metropolitan Community College were ongoing throughout the grant period. Six individuals were referred to this program for additional testing to determine any learning disabilities. After completion of testing, these individuals were main-streamed into the class schedule, utilizing teaching techniques which would enhance their learning experience. Four students, who were main-streamed, successfully completed their course assignments. Also, two students with hearing impairments were identified. Throughout their assessment testing and coursework, interpreters were used to enhance their learning process both in individual and group study within the classes. The interpreters were requested from the Nebraska Commission for the Hearing Impaired on an as needed basis. The costs for the interpreters were paid for by Valmont Industries, Inc.

During the classes, guest speakers were also invited to the Valmont 2000 classes. Examples of these speakers include representatives from the Valmont Personnel to explain benefits to the Reading class and a representative from the drafting department to speak on reading blueprints.

Throughout the course curricula, problem solving techniques were stressed.

OBJECTIVE 7: Develop and implement through August 1994, Valmont 2000 Mentoring program to assist new and/or current employees requesting mentors acquire essential basic or technical skills needed to start a new job or learn a new technique on the job.

As stated previously in this section, the Mentoring Program was implemented in March, 1993. Mentors were recommended by both Valmont 2000 Instructors and Valmont Supervisors. The recommended persons were then approached and asked if they would like to volunteer for the program. A formalized training was held to orient the mentors to the possible questions that they would receive while working with their fellow employees. A final evaluation meeting was held with the Mentors in August. The results of this report as shared in the Evaluation Section of this report show that the results of the mentoring program were very positive and would be an asset to any training program.

OBJECTIVE 8: To provide through August 1994 a Valmont 2000 tutorial program to assist employees with special learning needs successfully achieve literacy goals.

The recruitment of tutors was altered to recruit only from outside the Valmont facility. This decision was based on the need for confidentiality of the individuals TABE scores, their strengths and weaknesses. Teacher-Assistants were recruited from both existing Metropolitan Community College Tutors and from referrals received from professional organizations throughout the community. Ten Teacher-Assistants have worked with the Valmont 2000 project. The Teacher-Assistants were assigned to classes dependent upon their availability and the needs within the class. Since there is a variety of skill levels within each class, the Instructor identifies students who may potentially have problems with the curriculum and arrange for one-on-one instruction in these areas with the Teacher-Assistant. The use of Teacher-Assistants was also very helpful in completing class requirements for employees who had scheduled vacation during the class session. As part of the 360° evaluation process, Instructors are given the opportunity to evaluate a Teacher-Assistant's performance, as well as the Teacher-Assistant being able to evaluate the Instructor's performance. As with all Valmont 2000 employees, the Teacher-Assistants participated in an eight hour orientation. This orientation consisted of review of the employee handbook (See Appendix F7), meeting with a Counselor to explain the TABE test, meeting with the Job Analyst to explain the job analysis procedure, discussion with the Full-Time Instructor to review the existing curriculum and its goals, and a tour of the Valmont facility.

OBJECTIVE 9: To provide through August 1994, Valmont 2000 optional delivery systems for workplace literacy/skills development curriculum, workshops, and seminars via distance learning technology including satellite down-link nationally/internationally, and through telecourse instruction.

An Action Team was formed to review the strategies for implementation of this objective. The Action Team represented Valmont 2000 staff, Valmont Management Staff, and Metropolitan Community College Continuing Education Department staff. As the Action Team noted, the employees enrolled in the basic skills training were not at a level which would benefit from the classes currently offered through distance learning; however, Valmont did see the proposal as a real possibility for future training/opportunities. The proposal will be reconsidered at a later date (See Appendix F8).

OBJECTIVE 10: To provide through August 1994, mechanisms for continually monitoring participant's performance and maintaining Project files, data and reports.

All students enrolled in the Valmont 2000 project were registered with Metropolitan Community College, as well as, within a database at the Valmont 2000 site. The registration at Metro allowed students to record their success in the Basic Skills programs with a percentage grade. The requirement for successful completion of the course was 80% or better. The database on-site, tracked the students both by class type and session dates. This allowed for ease in scheduling employees whose course requirements had not yet been fulfilled.

Confidentiality was an ongoing concern throughout the project. The files within the department were locked and the Valmont Security Department held the keys for checkout by authorized personnel. Information shared with Valmont management was always on an anonymous basis, to protect the students. No information was given over the phone. Individuals coming to the Valmont 2000 offices requesting information, were asked to give pertinent information to determine their identification (i.e., birthdate, clock number). As the grant period progressed, confidentiality became less of an issue with the employees; however, the same standards originally established were maintained. As noted throughout the evaluation section, students developed a feeling of confidence and trust about their participation in the project.

OBJECTIVE 11: To evaluate through August 1994, the progress of the Valmont 2000 program through the use of evaluation measures that assess the degree to which the Project objectives have met the criteria and that include the development of qualitative and quantitative tools that measure the attainment or enhancement of job specific basic skills and other workplace outcomes.

Program evaluation included quarterly visits from the external evaluator (See Appendix F1). Course evaluation and Instructor surveys were completed at the end of each class session by the class participants. Additional internal measures such as productivity, number of accidents, tuition reimbursement requests and other indicators have been addressed in Section D: Evaluation. While reporting these indicators it is important to note that while Valmont 2000 appears to have a measurable impact, there were other programs within the Valmont plant which also affected these indicators, i.e., JIT, Benefits Programs, etc.

The Multi-Purpose Survey was designed to measure the level of strength of the employee's self-efficacy, job satisfaction and organizational commitment. The survey was administered three times: before taking the TABE, following the TABE feedback session and upon completion of the training. The results of this survey were shared by Dr. Durr and Dr. Peterson at the APA convention held in August, 1994 in California.

One area of this objectives, conducting the annual employee follow-up study, was not administered. At this time, Valmont utilizes a yearly employee follow-up study which encompasses all programs currently in use at Valmont Industries. It was not felt to be necessary or advantageous to administer an additional survey.

All objectives were addressed during the Valmont 2000 grant period. With the assistance of MCC and Valmont, classes are continuing through the end of the year to complete additional students. Throughout the grant, team work principles were implemented. This enabled the instructors and staff to create a very harmonious atmosphere, which assisted the students in feeling comfortable. The major accomplishment of this grant resulted in the program's acceptance and respect that it has earned within Valmont and the surrounding business community. This accomplishment was met by completing all of the 11 objectives with a humanistic and respectful attitude toward the students. While there are several recommendations to be made toward future projects, it should be noted that the current project had no major development flaws.

Recommendations

Recommendations

The purpose of this section is not to repeat the suggestions/recommendations stated earlier in this report, but to offer "global" recommendations to enhance work-place literacy programs within any company. Moreover, to propose a plan to Metropolitan Community College to offer its services to implement work-place literacy programs to other businesses and industries. With this in mind, we offer the following recommendations:

1. Future work-place literacy training programs must integrate within a company's existing training program. Integration of the program would present a positive image to the employees and the public, that training is a long term commitment to life-long learning, instead of a "flash-in-the-pan" project.

   The training program would become more cohesive because an employee would be able to choose classes from a "menu" of class offerings. Finally integration of work-place literacy with existing training programs allows for the sharing of resources and staff.

2. More efforts must be directed toward dissemination of the program's results in trade/professional journals and professional workshops/conferences. Custom-made learning materials, videos, and other forms of instructional technology strengthen training presentation.

3. MCC should further advance the proliferation of work-place literacy programs to small businesses. MCC's Business and Industry program could provide classes to business mangers on retraining their workforce through workplace literacy programs. MCC could offer a "generic" with specific workproblems developed from the job analyses. Interested companies could send one or more employees to the classes.

APPENDIX A

VALMONT

OUR MISSION

Valmont is a growth oriented global company.
We have earned a leadership position in and will focus our core business of irrigation, electrical construction products, metal distribution, micro-computer distribution and sales.

OUR BELIEFS AND COMMITMENTS

Our *customers* ultimately determine our success.
We commit to an uncompromising dedication to products and services that provide quality and value.

Our *people* make the difference in our performance.
We commit to provide an environment of excellence that encourages competence, creativity and commitment.

Our *shareholders* have the right to a fair return on their investment. We commit to a course of action that will enhance shareholder value.

***Integrity* and *ethical* behavior are fundamental principles in the conduct of business. We commit to dealing fairly with our suppliers as partners in our enterprise. To the communities in which we work, we commit to be a responsible, concerned participant.**

We are a for *profit* enterprise and as such, we commit to a process of continuing change and improvement.

APPENDIX B

VALMONT 2000
MISSION STATEMENT

To Develop a World Class, Well Educated, Motivated and Flexible Workforce who are prepared to successfully meet the changing environment/markets we serve. The Development Process will include the following specific objectives:

*Job positions at Valmont will be evaluated to determine the basic educational requirements.

*Job positions at Valmont will have assessment tools to assess the knowledge and skills required in their job.

*The assessment process will be administered by a third party and will be treated in a confidential manner.

*Employees at Valmont will have a plan of development to improve their knowledge and skills required for their position.

*Measurements will be established for overall company effectiveness to provide ongoing feedback for continuous improvement

*Because Valmont is a high employee involvement company that focuses on customers, and because the customers of Valmont 2000 are our employees, at all times, the workforce will be involved in the planning processes of Valmont 2000.

*The delivery of skills and knowledge training will be implemented by various educational modes available, i.e. Interactive Video, Classroom instruction, Individual Tutoring and Self-Directed.

VALMONT 2000
MISSION STATEMENT

To Develop a World Class, Well Educated, Motivated and Flexible Workforce who are prepared to successfully meet the changing environment/markets we serve. The Development Process will include the following specific objectives:

Conduct a thorough analysis of the work being performed at Valmont.

Identify the critical reading, writing, and math skills required for each job.

Assess employee reading, writing, and math skills.

Compare employee skills to those required by the job.

Provide an individualized development plan and training to overcome any skill deficiencies.

Involve Valmont employees, at all levels, in the planning process.

Utilize multiple methods to deliver skills training, e.g., interactive video, classroom instruction, individualized tutoring, and self-directed study.

Utilize a third party to administer employee skills assessment to maintain confidentiality.

Evaluate the effectiveness of the program on an on-going basis to provide for continuous improvement.

APPENDIX C

VALMONT 2000 PROJECT OBJECTIVES

1. To provide, through August 1994, an effective plan of management to ensure the proper and efficient management of the Valmont 2000 Program.

2. To recruit and enroll through the 18 month project period, 350 participants and to provide 100% of the participants workplace skills development activities and services to ensure attainment of literacy and other workplace basic skills essential to successful placement, continued employment, advancement in careers, and increased productivity.

3. Conduct job task/literacy analysis for 25 job titles in 12 job groups to determine needed basic skills training/needed curriculum adjustments per designated job task area in ongoing process through August 1994.

4. Design and implement, through August 1994, individualized learning plans for 100% of Valmont employees with identified deficits to bridge the gaps found between skills of employees and on-the-job requirements.

5. To develop and provide, through August 1994, performance based workplace specific skills training curriculum based upon job task analysis and cooperatively planned by Valmont employees and Valmont 2000 Project.

6. To provide, through August 1994, Valmont 2000 instructional support services and activities through the Valmont Development Center for 350 of Valmont 2000 participants.

7. Develop and implement, through August 1994, Valmont 2000 mentoring program to assist new and/or current employees requesting mentors acquire essential basic or technical skills needed to start a new job or to learn a new technique or technology on the job.

8. To provide, through August 1994 a Valmont 2000 tutorial program to assist employees with special learning needs successfully achieve literacy goals.

9. To provide, through August 1994, Valmont 2000 optional delivery systems for workplace skills development curriculum, workshops, and seminars via distance learning technology including satellite down-link nationally/ internationally, telecourse instruction, and computer assisted/ interactive video learning systems.

10. To provide, through August 1994, mechanisms for continually monitoring participants' performance and maintaining Project files, data and reports.

11. To evaluate, through August 1994, the progress of the Valmont 2000 program through the use of evaluation measures that assess the degree to which the Project objectives have met the criteria.

APPENDIX D1

COMMUNICATION SURVEY
PRE AND POST

TO THE EMPLOYEE: The purpose of this survey is to get your opinion of your communication skills (speaking and writing). Your responses will be held in strictest confidence, and only grouped together with others in your class. PLEASE DO NOT WRITE YOUR NAME ON THE SURVEY.

DIRECTIONS: Read each statement and circle the response that closely matches YOUR opinion. Use the rating scale listed below.

STRONGLY AGREE..............SA
AGREE..A
NO OPINION...........................NO
DISAGREE.................................D
STRONGLY DISAGREE...........SD

---

1. I feel that my writing skills are good.

   SA A NO D SD

2. I feel confident when I speak before a group.

   SA A NO D SD

3. My speaking skills are stronger than my writing skills.

   SA A NO D SD

4. My writing and speaking skills are about the same.

   SA A NO D SD

5. My speaking skills are good.

   SA A NO D SD

6. My writing skills are stronger than my speaking skills.

   SA A NO D SD

7. I feel confident when I have to write.

   SA A NO D SD

8. Tasks that involve writing are easy for me.

   SA A NO D SD

9. Tasks that involve speaking are easy for me.

   SA A NO D SD

THANK YOU FOR YOUR COOPERATION IN COMPLETING THIS SURVEY!

APPENDIX D2

Valmont 2000
Multi-Purpose Survey

The information requested below is for research and development purposes. All responses will be held in strict confidence.

Employee Name:____________________ Employee #:________________

Department Name:__________________ Department #:______________

Job Title:____

Building #:________________________ Work Phone Ext.:__________

Home Phone #:_____________________ Soc. Sec.#:_______________

Name of Immediate Supervisor:______________________________

Work Shift:_____ Shift Begin/End Times (Flex Times):_______________

Age:_____________________________ Birthdate:_____/_____/_____
Month Day Year

Race/Ethnicity:

____ White
____ Hispanic
____ American Indian
____ All Others
____ Black/African American
____ Asian/Pacific Islander

Highest level of obtained education:

____ Less than High School
____ High School Graduate
____ GED
____ Some College
____ Certificate
____ Dual Certificate
____ Associate's Degree
____ Dual Associate's Degree
____ Bachelor's Degree
____ Master's Degree
____ Doctoral Degree

Is English your Primary Language? ____ Yes ____ No

If "No", What is your Primary Language?______________________________

Gender: ____ Male ____ Female

Are you a single head of household? ____ Yes ____ No

How many years have you worked at Valmont?

_____ 0 to 5 years

_____ 6 - 10 years

_____ 11 - 15 years

_____ 16 years and over

Circle the number below that represents your difficulty in reading English.

0	1	2	3	4
None	Very Little	Some	Quite a bit	Lots

BEFORE YOU BEGIN

It is important that you realize that we need honest responses to the survey items that follow. *In such cases,* it is generally best to avoid asking employees to provide their names. Unfortunately, however, the design of this research project request that we be able to match your responses to *this survey* wit higher responses to the same survey at other times. To do so, we need your name and employee number.

Please feel confident, however, that the specific information that you are about to provide will not be communicated to anyone employed at Valmont. Only the Valmont 2000 project staff (Metropolitan Community College employees) will have access to your responses.

Thanks for your support.

Sincerely,

Margaret L. Durr, Ph.D.
Director
Valmont 2000 Project

Valmont 2000

Multi-Purpose Survey

The questions in this survey are for research and developmental purposes and will be used by Metropolitan Community College to assist in evaluating the Valmont 2000 project. The confidentiality of your responses will be maintained at all times.

Part I

Please use the scales below to indicate the extent to which you agree or disagree with the following statements. Circle the number that corresponds to your response.

1. I have the ability to do my job:

1	2	3	4	5	6	7
Strongly Disagree			Neither Agree Nor Disagree			Strongly Agree

2. I expect to perform well on my job.

1	2	3	4	5	6	7
Strongly Disagree			Neither Agree Nor Disagree			Strongly Agree

3. Given my personal qualities and background, I am confident that I can perform my job successfully.

1	2	3	4	5	6	7
Strongly Disagree			Neither Agree Nor Disagree			Strongly Agree

4. Given my past experience and accomplishments, I am confident that I can perform my job successfully.

1	2	3	4	5	6	7
Strongly Disagree			Neither Agree Nor Disagree			Strongly Agree

Part II

In part I you were asked to rate the extent to which you agreed or disagreed with four statements. In this part of the survey you are to indicate how sure you are of the rating you gave in Part I.

1. How sure are you about the rating you gave for item 1 (in Part 1)?

   0% 10% 20% 30% 40% 50% 60% 70% 80% 90% 100%

2. How sure are you about the rating you gave for item 2 (of Part 1)?

   0% 10% 20% 30% 40% 50% 60% 70% 80% 90% 100%

3. How sure are you about the rating you gave for item 3 (of Part 1)?

   0% 10% 20% 30% 40% 50% 60% 70% 80% 90% 100%

4. How sure are you about the rating you gave for item 4 (of Part 1)?

   0% 10% 20% 30% 40% 50% 60% 70% 80% 90% 100%

Part III

Please use the scale below to indicate the extent to which you agree or disagree with the following statement. Circle the answer that corresponds to your response.

1. The person I report to is the sort of person who would encourage to take time from my job to receive additional training and education.

1	2	3	4	5	6	7
Strongly Disagree			Neither Agree Nor Disagree			Strongly Agree

2. The person I report to is the sort of person who would do everything possible to give me the time from my job to receive additional learning and education.

1	2	3	4	5	6	7
Strongly Disagree			Neither Agree Nor Disagree			Strongly Agree

3. Most of my co-workers are the sort of people who would encourage me to take time from my job to receive additional training and education.

1	2	3	4	5	6	7
Strongly Disagree			Neither Agree Nor Disagree			Strongly Agree

4. Most of my co-workers are the sort of people who would do everything possible to give me time from my job to receive additional training and education.

1	2	3	4	5	6	7
Strongly Disagree			Neither Agree Nor Disagree			Strongly Agree

5. I believe that I can benefit from additional training and education.

1	2	3	4	5	6	7
Strongly Disagree			Neither Agree Nor Disagree			Strongly Agree

6. I believe that I am capable of improving my math, reading and writing skills if given additional training and education.

1	2	3	4	5	6	7
Strongly Disagree			Neither Agree Nor Disagree			Strongly Agree

Part IV

1. All things considered, how well do you expect to perform on your job?

1	2	3	4	5	6	7
Strongly Disagree			Neither Agree Nor Disagree			Strongly Agree

2. All things considered, how sure are you of the rating you provided in response to question 1 above?

0% 10% 20% 30% 40% 50% 60% 70% 80% 90% 100%

Part V

1. Circle the number of the statement which best describes how well you like your job.

    1. I hate it.
    2. I dislike it.
    3. I don't like it.
    4. I am indifferent to it.
    5. I like it.
    6. I am enthusiastic about it.
    7. I love it.

2. Circle the number of the statement which best describes how much of the time you are satisfied with your job.

    1. All of the time.
    2. Most of the time.
    3. A good deal of the time.
    4. About half the time.
    5. Occasionally
    6. Seldom
    7. Never

3. Circle the number of the statement which best tells how you would feel about changing your job.
    1. I would quit this job at once if I could find anything else to do.
    2. I would take almost any other job in which I could earn as much as I am earning now.
    3. I would like to change both my job and my line of work.
    4. I would like to exchange my present job for another job in the same line of work.
    5. I am not eager to change my job but I would do so if I could get a better job.
    6. I cannot think of any job for which I would exchange mine.
    7. I would not exchange my job for any other.

4. Circle the number of the statement which lists how you think you compare with other people.
    1. No one likes his job better than I like mine.
    2. I like my job much better than most people like theirs.
    3. I like my job better than most people like theirs.
    4. I like my job about as well as most people like theirs.
    5. I dislike my job more than most people dislike theirs.
    6. I dislike my job much more than most people dislike theirs.
    7. No one dislikes their job more than I dislike mine.

Part VI

Please use the scales below to indicate the extent to which you agree or disagree with the following statement. Circle the number that corresponds to your response.

1. I am willing to put in a great deal of effort beyond that normally expected in order to help Valmont be successful.

1	2	3	4	5	6	7
Strongly Disagree			Neither Agree Nor Disagree			Strongly Agree

2. I tell my friends that Valmont is a great place to work.

1	2	3	4	5	6	7
Strongly Disagree			Neither Agree Nor Disagree			Strongly Agree

3. I feel a great deal of loyalty to Valmont.

1	2	3	4	5	6	7
Strongly Disagree			Neither Agree Nor Disagree			Strongly Agree

4. I would accept almost any type of job assignment in order to keep working at Valmont.

1	2	3	4	5	6	7
Strongly Disagree			Neither Agree Nor Disagree			Strongly Agree

5. I find that my values are very similar to Valmont's values.

1	2	3	4	5	6	7
Strongly Disagree			Neither Agree Nor Disagree			Strongly Agree

6. I am proud to tell others that I am part of Valmont.

1	2	3	4	5	6	7
Strongly Disagree			Neither Agree Nor Disagree			Strongly Agree

7. I would rather not work for a different company even if the work was the same as the work I perform at Valmont.

1	2	3	4	5	6	7
Strongly Disagree			Neither Agree Nor Disagree			Strongly Agree

8. Valmont really inspires my very best job performance.

1	2	3	4	5	6	7
Strongly Disagree			Neither Agree Nor Disagree			Strongly Agree

9. It would take a very large change in my present job to cause me to leave Valmont.

1	2	3	4	5	6	7
Strongly Disagree			Neither Agree Nor Disagree			Strongly Agree

10. I am extremely glad that I chose to work for Valmont, rather than some other company.

1	2	3	4	5	6	7
Strongly Disagree			Neither Agree Nor Disagree			Strongly Agree

11. There is a lot to be gained by sticking with Valmont.

1	2	3	4	5	6	7
Strongly Disagree			Neither Agree Nor Disagree			Strongly Agree

12. I find it easy at agree with Valmont's employee policies.

1	2	3	4	5	6	7
Strongly Disagree			Neither Agree Nor Disagree			Strongly Agree

13. I really care about the fate of Valmont.

1	2	3	4	5	6	7
Strongly Disagree			Neither Agree Nor Disagree			Strongly Agree

14. Valmont is the best company to work for.

1	2	3	4	5	6	7
Strongly Disagree			Neither Agree Nor Disagree			Strongly Agree

15. Deciding to work for Valmont was the best decision I ever made.

1	2	3	4	5	6	7
Strongly Disagree			Neither Agree Nor Disagree			Strongly Agree

APPENDIX D3

MULTI-PURPOSE SURVEY

Industrial/Organizational Psychologist employed by Metropolitan Community College developed a survey to serve as an evaluation tool. The survey (entitled the Multi-Purpose Survey) was developed to record demographic information and to track student reaction throughout their involvement with Valmont 2000 training. Demographic information included name, job title, age, ethnicity, level of education, gender, English as primary language, and years of service. Measures of participants' attitude included worker confidence in job performance and their ability to benefit from academic training, worker perception of supervisory support and co-worker support, job satisfaction and organizational commitment. Survey responses remained confidential at all items.

PURPOSE OF RESEARCH

1. To examine whether the workers' confidence in their ability to perform their job changed significantly while participating in the program.

2. To examine whether the workers' perception of supervisory support changed significantly while participating in the program.

3. To examine whether the workers' perception of co-worker support changed significantly while participating in the program.

4. To examine whether the workers' confidence in their ability to benefit from academic training changed significantly while participating in the program.

5. To examine whether the workers' job satisfaction changed significantly while participating in the program.

6. To examine whether the workers' organizational commitment changed significantly while participating in the program.

PARTICIPANTS

Participants were 448 shop floor employees with an average age of 37.4 years. Their typical level of education was high school graduate, many with GED's. Among the 448 participants, 420 were male, 172 were single head of household, and 424 were Caucasian. Only 3 reported English as their second language. Of the 448 participants taking the achievement tests, 384 required basic skills training in reading, writing, and/or math.

SURVEY ADMINISTRATION

The survey was administered at three different times throughout the participants' involvement in the Valmont 2000 assessment and training process. The first administration of the survey was just prior to the administration of the TABE. The second administration of the survey occurred at the end of the counseling session after the participants were informed of the test results and had learned of their training needs if any. Finally, the third administration of the survey took place at the end of the eight week training session. Individuals that did not receive training did not respond to the survey at the post training interval. Those individuals that received training in one or more areas responded to the survey at the end of all training sessions received.

STUDENT REACTION MEASURES

Worker Confidence in their Ability to Perform Their Job. Worker Confidence in their ability to perform their job was measured with a four item survey which utilizes a 7-point scale ranging from 1 (Strongly Disagree) to 7 (Strongly Agree) in response to positively worded stimulus statement (i.e., I have the ability to do my job) (See Appendix A).

Worker Perception of Supervisory Support. Perceived supervisory support was measured on a 7-point scale which ranged from 1(Strongly Disagree) to 7 (Strongly Agree) in response to positively worded stimulus statements (i.e., the person I report to is the sort of person who would encourage me to take time from my job to receive additional training and education) (Appendix B).

Worker Perception of Co-Worker Support. Perceived Co-worker support was measured with a two item survey on a 7 point scale which ranged from 1 (Strongly Disagree) to 7 (Strongly Agree) in response to positively worded stimulus statement (i.e., most of my co-workers are the sort of people who would encourage me to take time from my job to receive additional training and education) (See Appendix C).

Worker Confidence in Their Ability to Benefit from Academic Training. Perceived confidence was measured on a 7 point scale which ranged from 1 (Strongly Disagree to 7 (Strongly Agree) in response to positively worded stimulus statement (i.e., I believe that I can benefit from additional training and education) (See Appendix D).

Worker Job Satisfaction. Worker Job Satisfaction was measured with a four item survey which utilized various 7 point scale formats. (See Appendix E).

Organizational Commitment. Organizational commitment was measured on a 7 point scale which ranged from 1 (Strongly Disagree) to 7 (Strongly Agree) in response to positively worded stimulus statement (i.e., It would take a very large change in my present job to cause me to leave Valmont) (See Appendix F).

RESULTS

WORKER CONFIDENCE IN THEIR ABILITY TO PERFORM THEIR JOB

Reading Training Participants Only

Time of Measure	Average Rating	Number Responding
Entry into program	6.46	79
Following Counseling	6.37	76
Following Training	6.05	73

Math Training Participants

Time of Measure	Average Rating	Number Responding
Entry into program	6.56	184
Following Counseling	6.45	182
Following Training	6.22	182

Writing Training Participants Only

Time of Measure	Average Rating	Number Responding
Entry into program	6.50	270
Following Counseling	6.43	269
Following Training	6.09	265

All Participants Combined

Time of Measure	Average Rating	Number Responding
Entry into program	6.55	446
Following Counseling	6.46	441
Following Training	6.13	520

WORKER PERCEPTION OF SUPERVISORY SUPPORT

Reading Training Participants Only

Time of Measure	Average Rating	Number Responding
Entry into program	5.32	79
Following Counseling	5.32	74
Following Training	4.80	73

Math Training Participants Only

Time of Measure	Average Rating	Number Responding
Entry into program	5.05	184
Following Counseling	5.10	181
Following Training	4.82	179

Writing Training Participants Only

Time of Measure	Average Rating	Number Responding
Entry into program	5.08	270
Following Counseling	5.15	265
Following Training	4.78	263

All Participants Combined

Time of Measure	Average Rating	Number Responding
Entry into program	5.15	445
Following Counseling	5.16	434
Following Training	4.80	515

WORKER PERCEPTION OF CO-WORKER SUPPORT

Reading Training Participants Only

Time of Measure	Average Rating	Number Responding
Entry into program	4.89	79
Following Counseling	4.71	74
Following Training	4.47	73

Math Training Participants Only

Time of Measure	Average Rating	Number Responding
Entry into program	4.53	184
Following Counseling	4.51	182
Following Training	4.46	180

Writing Training Participants Only

Time of Measure	Average Rating	Number Responding
Entry into program	4.59	270
Following Counseling	4.55	265
Following Training	4.40	264

All Participants Combined

Time of Measure	Average Rating	Number Responding
Entry into program	4.60	445
Following Counseling	4.59	434
Following Training	4.43	517

WORKER CONFIDENCE IN THEIR ABILITY TO BENEFIT FROM ACADEMIC TRAINING

Reading Training Participants Only

Time of Measure	Average Rating	Number Responding
Entry into program	5.75	79
Following Counseling	5.85	74
Following Training	5.35	72

Math Training Participants Only

Time of Measure	Average Rating	Number Responding
Entry into program	5.79	184
Following Counseling	5.80	181
Following Training	5.63	174

Writing Training Participants Only

Time of Measure	Average Rating	Number Responding
Entry into program	5.67	269
Following Counseling	5.77	265
Following Training	5.45	265

All Participants Combined

Time of Measure	Average Rating	Number Responding
Entry into program	5.74	444
Following Counseling	5.84	434
Following Training	5.50	511

WORKER JOB SATISFACTION

Reading Training Participants Only

Time of Measure	Average Rating	Number Responding
Entry into program	5.02	77
Following Counseling	5.01	73
Following Training	5.10	71

Math Training Participants Only

Time of Measure	Average Rating	Number Responding
Entry into program	4.87	184
Following Counseling	4.88	176
Following Training	4.90	173

Writing Training Participants Only

Time of Measure	Average Rating	Number Responding
Entry into program	4.87	267
Following Counseling	4.93	257
Following Training	4.86	255

All Participants Combined

Time of Measure	Average Rating	Number Responding
Entry into program	4.86	443
Following Counseling	4.88	424
Following Training	4.90	499

ORGANIZATIONAL COMMITMENT

Time of Measure	Reading Training Participants Only Average Rating	Number Responding
Entry into program	5.51	71
Following Counseling	5.57	72
Following Training	5.21	68

Time of Measure	Math Training Participants Only Average Rating	Number Responding
Entry into program	5.22	182
Following Counseling	5.23	178
Following Training	4.93	167

Time of Measure	Writing Training Participants Only Average Rating	Number Responding
Entry into program	5.17	264
Following Counseling	5.22	260
Following Training	4.93	253

Time of Measure	All Participants Combined Average Rating	Number Responding
Entry into program	5.18	437
Following Counseling	5.25	425
Following Training	4.97	488

CONCLUSIONS

There was a slight decline in worker confidence in their ability to perform their job, worker perception of supervisory support, worker perception of co-worker support, worker confidence in their ability to benefit from academic training, and organizational commitment. A slight increase occurred in the area of job satisfaction. These trends existed across all training program (reading, math, and writing). However, the mean rating on each of these scales never declined below the middle of the rating scale which was anchored as neither agree nor disagree. Therefore, although the worker attitudes declined in several areas, they were still above neutral and in a positive direction.

The slight overall decline in worker attitude could have occurred for a number of reasons. Some possible explanations are ceiling effect, loss of confidence due to some individuals being identified as "in need of basic skills training", and the response scale format.

A ceiling effect is possible because initial responses were very high in all areas. It would be unwise to predict any kind of increase when ratings are already so near the top.

A general loss of confidence among individuals that participate in one or more of the training programs might be expected because being identified as in need can be perceived by the employee as "finding fault". Training may cause some employees to become aware of what they do not know but feel they should know.

It is also possible that the response scale format could have contributed to response variance. The response scale format used for all items was a Likert Scale ranging from 1 (Strongly Disagree) to 7 (Strongly Disagree) with the exception of the job satisfaction measure. In this measure, the response scales were in a sentence format. Considering that the only positive attitudinal increase was found with this scale, leads one to speculate whether the results may have been affected by some response format artifact.

From the analysis of the Multi-Purpose survey, it is reasonable to conclude that participation in a workplace literacy program can impact a worker's attitude and beliefs. However, differences were not of sufficient magnitude to be of great concern.

In the future, additional evaluation measures could contribute to the development of supporting interventions that may make participation in a workplace literacy program psychologically satisfying.

APPENDIX A

WORKER CONFIDENCE IN THEIR ABILITY TO PERFORM THEIR JOB

Please use the scales below to indicate the extent to which you agree or disagree with the following statements. Circle the number that corresponds to your response.

1. I have the ability to do my job:

1	2	3	4	5	6	7
Strongly Agree			Neither Agree nor Disagree			Strongly Agree

2. I expect to perform well on my job.

1	2	3	4	5	6	7
Strongly Agree			Neither Agree nor Disagree			Strongly Agree

3. Given my personal qualities and background, I am confident that I can perform my job successfully.

1	2	3	4	5	6	7
Strongly Agree			Neither Agree nor Disagree			Strongly Agree

4. Given my past experience and accomplishments, I am confident that I can perform my job successfully.

1	2	3	4	5	6	7
Strongly Agree			Neither Agree nor Disagree			Strongly Agree

APPENDIX B

WORKER PERCEPTION OF SUPERVISORY SUPPORT

Please use the scale below to indicate the extent to which you agree or disagree with the following statement. Circle the number that corresponds to your response.

1. The person I report to is the sort of person who would encourage me to take time from my job to receive additional training and education.

1	2	3	4	5	6	7
Strongly Agree			Neither Agree nor Disagree			Strongly Agree

2. The person I report to is the sort of person who would do everything possible to give me the time from my job to receive additional learning and education.

1	2	3	4	5	6	7
Strongly Agree			Neither Agree nor Disagree			Strongly Agree

APPENDIX C

WORKER PERCEPTION OF CO-WORKER SUPPORT

1. Most of my co-workers are the sort of people who would encourage me to take time from my job to receive additional training and education.

1	2	3	4	5	6	7
Strongly Agree			Neither Agree nor Disagree			Strongly Agree

2. Most of my co-workers are the sort of people who would do everything possible to give me time from my job to receive additional training and education.

1	2	3	4	5	6	7
Strongly Agree			Neither Agree nor Disagree			Strongly Agree

APPENDIX D

WORKER CONFIDENCE IN THEIR ABILITY TO BENEFIT FROM ACADEMIC TRAINING

1. I believe that I can benefit from additional training and education.

1	2	3	4	5	6	7
Strongly Agree			Neither Agree nor Disagree			Strongly Agree

2. I believe that I am capable of improving my math, reading and writing skills if given additional training and education.

1	2	3	4	5	6	7
Strongly Agree			Neither Agree nor Disagree			Strongly Agree

APPENDIX E

WORKER JOB SATISFACTION

1. Circle the number of the statement which best describes how well you like your job.

    1. I hate it.
    2. I dislike it.
    3. I don't like it.
    4. I am indifferent to it.
    5. I like it.
    6. I am enthusiastic about it.
    7. I love it.

2. Circle the number of the statement which best describes how much of the time you are satisfied with your job.

    1. All of the time.
    2. Most of the time.
    3. A good deal of the time.
    4. About half of the time.
    5. Occasionally.
    6. Seldom
    7. Never.

3. Circle the number o the statement which best tell how you would feel about changing your job.

    1. I would quit this job at once if I could find anything else to do.

    2. I would take almost any other job in which I could earn as much as I am earning now.

    3. I would like to change both my job and my line of work.

    4. I would like to exchange my present job for another job in the same line of work.

    5. I am not eager to change my job but I would do so if I could get a better job.

    6. I cannot think of any job for which I would exchange mine.

    7. I would not exchange my job for any other.

4. Circle the number of the statement which lists how you think you compare with other people.

1. No-one likes his job better than I like mine.
2. I like my job much better than most people like theirs.
3. I like my job better than most people like theirs.
4. I like my job about as well as most people like theirs.
5. I dislike my job more than most people dislike theirs.
6. I dislike my job much more than most people dislike theirs.
7. No-one dislikes their job more than I dislike mine.

APPENDIX F

ORGANIZATIONAL COMMITMENT

Please use the scales below to indicate the extent to which you agree or disagree with the following statement. Circle the number that corresponds to your response.

1. I am willing to put in a great deal of effort beyond that normally expected in order to help Valmont be successful.

1	2	3	4	5	6	7
Strongly Agree			Neither Agree nor Disagree			Strongly Agree

2. I tell my friends that Valmont is a great place to work.

1	2	3	4	5	6	7
Strongly Agree			Neither Agree nor Disagree			Strongly Agree

3. I feel a great deal of loyalty to Valmont.

1	2	3	4	5	6	7
Strongly Agree			Neither Agree nor Disagree			Strongly Agree

4. I would accept almost any type of job assignment in order to keep working for Valmont.

1	2	3	4	5	6	7
Strongly Agree			Neither Agree nor Disagree			Strongly Agree

5. I find that my values are very similar to Valmont's values.

1	2	3	4	5	6	7
Strongly Agree			Neither Agree nor Disagree			Strongly Agree

6. I am proud to tell others that I am part of Valmont.

1	2	3	4	5	6	7
Strongly Agree			Neither Agree nor Disagree			Strongly Agree

7. I would rather work for a different company even if the work was the same as the work I perform at Valmont.

1	2	3	4	5	6	7
Strongly Agree			Neither Agree nor Disagree			Strongly Agree

8. Valmont really inspires my very best job performance.

1	2	3	4	5	6	7
Strongly Agree			Neither Agree nor Disagree			Strongly Agree

9. It would take a very large change in my present job to cause me to leave Valmont.

1	2	3	4	5	6	7
Strongly Agree			Neither Agree nor Disagree			Strongly Agree

10. I am extremely glad that I chose to work for Valmont, rather than some other company.

1	2	3	4	5	6	7
Strongly Agree			Neither Agree nor Disagree			Strongly Agree

11. There is a lot to be gained by sticking with Valmont.

1	2	3	4	5	6	7
Strongly Agree			Neither Agree nor Disagree			Strongly Agree

12. I find it easy to agree with Valmont's employee policies.

1	2	3	4	5	6	7
Strongly Agree			Neither Agree nor Disagree			Strongly Agree

13. I really care about the fate of Valmont.

1	2	3	4	5	6	7
Strongly Agree			Neither Agree nor Disagree			Strongly Agree

14. Valmont is the best company to work for.

1	2	3	4	5	6	7
Strongly Agree			Neither Agree nor Disagree			Strongly Agree

15. Deciding to work for Valmont was the best decision I ever made.

1	2	3	4	5	6	7
Strongly Agree			Neither Agree nor Disagree		Strongly Agree	

APPENDIX D4

SUMMARY OF MAJOR ACCOMPLISHMENTS AND LESSONS LEARNED CONCERNING THE MENTOR TRAINING AND THE MENTOR PROGRAM

Several circumstances contributed to the timing of the mentor training. In order to have mentors how had some experience with Valmont 2000 classes, it was not possible to recruit prospective mentors until after at least one session of classes had been completed. Initially, no funds had been allocated for the development and administration of a mentor training program. Money budgeted for curriculum development was reallocated to mentor training after the qualified staff of Valmont 2000 instructors developed their own class program and materials, thus saving the funds that would have been needed to buy a pre-published curriculum.

The size of the mentor training program needed to fit the needs of Valmont Industries. It was decided that a small scale pilot program would be the best way to gain initial support for the mentor program. The decision to increase the number of mentors in the future would depend in part on the success of the pilot program. The needs of the company dictated the number of hours of training time also.

The mentor handbook (see Attachment A) was developed specially for the Valmont 2000 program. It addresses what appeared to have been the major concerns of the plant personnel during the initial sessions of the Valmont 2000 training sessions -- why Valmont Industries is involved in this type of training, and what is involved in the different phases of the Valmont 2000 program. The information included in the handbook was collected through extensive interviews and research. The handbook has been well received by the mentors, and the members of management who have read it. It is easily revisable and some revisions have already been made at the suggestion of the mentor trainees (See Attachment C). The mentor training was based on the information in the handbook.

It is interesting that the mentors' evaluation of the training and the handbook seems to be higher several months after their training than it was immediately following the training. See the Mentor Training Evaluation pages (Attachment E) for the ratings the mentors gave immediately following their training. Note that there are three questions for each aspect of the training--the handbook, the training sessions, and the trainer. The third questions for each aspect asks the mentors to rate how well prepared they think they are to answer the questions employees may ask. In each section there is a slight dip in the ratings when it comes to that third question. The last question asked the mentors to give an overall rating of how well prepared they feel. It is apparent that they had uncertainties about what kind of questions they might be asked and, therefore, how well prepared they were to answer them. At the follow-up meeting (Attachment F) each of the mentors indicated that he would not make any changes to the handbook or the training, and that he felt that he had been well prepared for the questions that have been asked.

Based on the feedback that has been received it appears that the handbook could serve as a model for future training program.

At the follow-up meetings, the mentors also stated that more publicity about the mentor program would probably be helpful. They indicated that even though they felt well prepared and effective in the contacts that had been made, the number of contacts was much lower than they had expected. They also felt that there would probably be more demand for mentors in the future if there were any changes to the Valmont 2000 program, when employees would once again want to know what is going on and why. They felt comfortable with the fact that, if that happened, the mentor training would be revised appropriately.

QUESTIONNAIRE

Valmont 2000 is in the process of implementing a Mentoring and Tutoring Program to assist workers in gaining essential workplace literacy skills.

We would like you to take a few moments to complete the following survey
so that we may get an idea of what you as Valmont employees would like to see offered in this program.

The purpose of the tutor is to individualize and personalize the teaching/learning experience for the student. Tutoring will be available during class time, but students may also choose to participate in tutoring sessions outside of their normal shifts.

1. I would like to see a Tutoring Program implemented.

1	2	3	4	5	6	7
Strongly Disagree			Neither Agree Nor Disagree			Strongly Agree

2. Would you prefer to be tutored by a Metropolitan Community College Student or by a member of the Valley Community. (i.e. civic groups)

1	2	3
(Metro Student)	(Valley Group)	(No Preference)

3. Do you think having a tutor would help you go through the Valmont 2000 classes more smoothly?

1	2	3	4	5	6	7
Strongly Disagree			Neither Agree Nor Disagree			Strongly Agree

QUESTIONNAIRE (CONTINUED)

The purpose of the Mentor is to serve as an effective role model and coach. Mentors will be Valmont 2000 graduates. Mentor's are people who have been where you want to go in your career, or other pursuits, and who are willing to act as your guide and friend. Mentors should have a genuine interest in your personal growth and development.

4. I would like to see a Mentoring Program implemented.

1	2	3	4	5	6	7
Strongly Disagree			Neither Agree Nor Disagree			Strongly Agree

5. Would you prefer to have a mentor from within your Division?

1	2	3	4	5	6	7
Strongly Disagree			Neither Agree Nor Disagree			Strongly Agree

7. Do you think having a mentor would help you go through the Valmont 2000 classes more smoothly?

1	2	3	4	5	6	7
Strongly Disagree			Neither Agree Nor Disagree			Strongly Agree

8. Would you like the opportunity to become a mentor if qualified?

1	2	3	4	5	6	7
Strongly Disagree			Neither Agree Nor Disagree			Strongly Agree

QUESTIONNAIRE RESULTS

	Disagree			Neither			Agree
Quest. Number	1	2	3	4	5	6	7
1	6	6	7	43	13	11	13
3	8	6	11	42	10	8	13
4	10	4	8	48	12	10	8
5	13	6	11	39	15	7	8
7	10	2	10	43	13	12	6
8	33	13	7	25	5	9	6
TOTALS:	80	37	54	240	68	57	54

Question #2

Would you prefer to be tutored by a MCC student or by a member of the Valley Community. (i.e. civic groups)

1. Metro Student	2. Valley Group	3. No Preference
39	9	49

Mentor Training Evaluation

Please circle the number that most closely expresses your feeling about each statement.

1. The Mentor Memos handbook addresses many of the concerns of the plant personnel.

I Disagree I Agree
1 2 3 4 5 6 7 8 9 10

2. If I think some information should be added to the Mentor Memos handbook, I feel confident that my suggestions would be considered and necessary information would be added.

I Disagree I Agree
1 2 3 4 5 6 7 8 9 10

3. The continually updated Mentor Memos handbook contains the information I need to deal with the questions that seem to be of most concern to the plant personnel.

I Disagree I Agree
1 2 3 4 5 6 7 8 9 10

4. The mentor training sessions have helped me understand more completely the reasons why Valmont is involved in Valmont 2000.

I Disagree I Agree
1 2 3 4 5 6 7 8 9 10

5. The mentor training sessions have given me a more thorough understanding of the different parts of the Valmont 2000 program.

I Disagree I Agree
1 2 3 4 5 6 7 8 9 10

6. The mentor training sessions have prepared me adequately to address any questions about Valmont 2000 that other plant personnel may ask me.

I Disagree I Agree
1 2 3 4 5 6 7 8 9 10

7. The trainer was responsive to any comments made by the mentors during the training sessions.

I Disagree I Agree
1 2 3 4 5 6 7 8 9 10

8. The trainer tried to provide as much information as possible about all aspects of the Valmont 2000 program.

I Disagree I Agree
1 2 3 4 5 6 7 8 9 10

9. The trainer included explanations that will help me answer questions that may be asked by other plant personnel.

I Disagree I Agree
1 2 3 4 5 6 7 8 9 10

10. With the knowledge we have now of the concerns of the plant personnel, the mentor training program provided a thorough preparation for me to address the questions I expect the other plant personnel to ask.

I Disagree I Agree
1 2 3 4 5 6 7 8 9 10

Comments:

APPENDIX D5

CASE STUDY # 1

This employee is a 39 year old white male. He has been with Valmont for more than 6 years.

This employee was in both math and writing classes. He said that he looked forward to going to the classes and continued to have a positive attitude all the way through both classes.

This employee was in a small math class. He says that this enabled the instructor to provide more attention and assistance to each class member. He says that less individual help was available in the writing class. He rates the quality of instruction in the writing class as good and the quality of instruction in the math class as better than the writing class.

He says that most of what he got out of the math class was a good refresher course. He says that taking the class probably has made him a better employee, but there has been no dramatic difference. He says that he has some interest in taking more classes in math. When asked if taking the classes changed his life outside of class, he said that he was now able to help his 7th grader with math problems.

This employee noted that there were a few class members who had a poor attitude that never improved. He cites the problem but suggests no remedy.

CASE STUDY # 2

This employee is a 38 year old white male. He has been at Valmont less than 5 years.

Valmont 2000 staff assigned this employee to the math class. He said that he had a negative attitude before he started the class, but he decided to try to make the best of it. He says that his experience in class caused him to have a more positive attitude.

He thought the content of the class was appropriate for adults. He said that the instructor used a variety of methods that included an outside speaker. The instructor taught using examples taken from, and applied to work situations. He judged the quality of instruction to fall somewhere between good and excellent.

This employee said the math class was scheduled at a very busy time of the year. He would have preferred it to be a a time of the year when they were not so busy.

He felt that the class has made him a somewhat better employee. He learned, or relearned, how to divide decimals, how to place the decimal point, how to change fractions to decimals, and the meaning of mathematical signs.

CASE STUDY #3

This employee is a 46 year old Hispanic female. She has had some college work and has worked at Valmont more than 11 years.

Valmont 2000 staff assigned this employee to the math class. She says that she, along with the rest of the class members, started the class with a good attitude and maintained that good attitude.

This employee said that the instructor did the things that make a good class. The instructor went slow and took time to carefully answer questions. The instructor asked students to bring materials or examples of math problems to use as material for instruction. This employee rated the instruction as good and said that it was a good general review of math - just what the class needed.

This employee, in her work, often needs to measure quantities of liquids. She says that the math class improved her ability to measure liquids. She noted that another class member, a welder, improved his measuring skills that were often used in welding.

She has a good attitude toward the Valmont 2000 project, but she says that she started with a good attitude rather than developing it as a result of instruction. She says that her success in doing class work has caused her to consider taking more classes.

CASE STUDY #4

This employee is a 24 year old white male. He has been with Valmont less than 5 years.

The Valmont 2000 program assigned this employee to both the writing and the math programs.

This employee said that there were some problems at the beginning of both of the classes. For the math class it was a problem of notification; in the actual instruction this employee felt that the instructor and the instruction were not well organized. However, a tutor helping to teach the class was given high marks for being helpful and knowledgeable. In the writing class the first sessions were poor but improved in later sessions. By the end of the writing class the employee rated the quality of instruction as excellent, and said that he learned quite a bit. The instruction in the math class was satisfactory, and the employee felt that he learned a lot about fractions.

This employee said that being in the classes caused him to gain self-confidence and because of this he was a better and more productive employee than before. He gave few if any specifics of instances of where he was using things that he had learned in class. He said that taking the class had increased both his interest and awareness in writing and math. He feels that the Valmont 2000 project is worthwhile.

CASE STUDY #5

This employee is a 40 year old female. The Valmont 2000 program assigned her to both math and writing classes.

The assignment to the math class was inconvenient from several points of view. The time schedule was not convenient for the employee and the place was inconvenient because it was a long distance from where she worked. Consequently, she attended only several sessions and dropped out. She will start again at a more convenient time. In this case the instruction to the math class was not convenient and was not successful. This employee has an excellent attitude and will probably succeed in the math class after she has been rescheduled.

This employee says that some of the people assigned to the writing class entered the first session with either a neutral or a negative attitude; after the first few sessions most of the people had improved their attitude. She says that her attitude was good from the first.

This employee gives good marks to the instructor. She says that the instructor was friendly and had interesting discussions. The instructor always took time to answer all questions carefully and thoroughly. The instructor used materials directly related to work. This employee gives the instructor a rating of excellent, and says that she learned a lot.

As a result of instruction this employee now says that she has an increased awareness of grammar not present before. She is now able to proofread her E-mail for errors. She is more careful about punctuation than before. She also says that she is a better listener than before. She feels that she is a better and more productive employee than before. She feels that the Valmont 2000 project has been worthwhile.

CASE STUDY #6

This employee is a 44 year old white male. He is a high school graduate.

This employee completed both the writing and math classes. He remembers doing quite well in math during high school, but says that he had forgotten much of what he knew about math. He had forgotten so much that he was not able to help his grade school children when they asked him how to do their homework. Before he completed the writing class, he asked for help from supervisory personnel if he needed to write up a hazard report or other report. Now he is able to do it himself.

The employee especially enjoyed the math class because he was able to reclaim some of the expertise that he showed when he was a high school student. He apparently did not enjoy the writing class as much; he felt that the instructor sometimes went too fast, but he speaks well of the results achieved in that class. This employee says that the quality of instruction in the math class was very good and the instruction in the writing class was good. This employee gave high marks to those teachers who went slow, took plenty of time to explain, used interesting examples with practical applications, had a good sense of humor, and were able to deal with members of the class who were not especially interested in being in the class.

This employee says that he learned a lot in both of the classes. He says that the instruction has made him a better employee. As a result of the instruction he is more interested in math than before. He says that he would consider taking more classes in math to improve his mastery of the subject. When asked for specific instances of where he used the things he learned in class, he said that he was now able to use the E-mail system more effectively than before. He said he could now write up a hazard report where he would previously asked a supervisor to do it for him. He said that he was now able to help his grade school children with their homework - something he had not been able to do before.

CASE STUDY #7

This employee is a 34 year old white male. He has been at Valmont more than 11 years.

This employee has completed the writing class. He said that before he began the class he was not especially enthusiastic about being in the class. It took about three class sessions for him to improve his attitude and to gain a degree of enthusiasm about the class. He says that he did not start with great enthusiasm, but he figured that he was going to do the work on company time and since he was getting paid, it would be an easy way to collect his wages.

Although the attitude mentioned may seem somewhat cynical, the final result was an employee that perceives a significant improvement in his skills. Employees do the work on company time; they get paid for being in class. They do not have to go to the time and expense of registering for some outside class. The class comes to them for free.

The employee rated the quality of instruction as good. The teacher used a variety of methods and adapted some of the instruction so that it was specific to things going on at Valmont. He said that the content was appropriate for adults. He gives high marks to the teacher for both skill and attitude. He says that he was able to respond to the instructor's questions and doing so gave him confidence in his ability.

As a result of taking the instruction, the employee says that he is now able to use E-mail better than before. He is better able to write up reports than before. He feels more confident of his ability to write than before. He says that taking the class has made him more aware of things like punctuation that he never even noticed before. He talks to his wife about punctuation and grammar. He expressed an interest in taking some additional work in English or writing classes.

CASE STUDY #8

This employee is a 37 year old married male at Valmont. According to his own admission and according to test results from the TABE Test, he was a borderline illiterate. Although comprehensive psychological test results are not available, the employee says that he has some degree of dyslexia. It is not clear how severe this problem is nor is it clear how long the employee has been aware of the problem. The Valmont 2000 staff assigned him to the reading class because of his low scores in reading.

The instructor apparently was aware of the severity of the employee's problem and planned an individualized program designed to meet the unique needs of this individual. The instructor worked through personnel at Metropolitan Community College and arranged for the employee to participate in advanced phonics instruction. The employee is very pleased with the progress made to this point. He is continuing work even though the formal classwork has been completed. In addition to the phonics instruction, he has worked with a tutor which has also contributed to his progress.

The employee says that the Valmont 2000 program has helped him to be a better employee. He says that he is now able to both read and write E-mail much better than before. His life outside of work has also changed. He has started reading a newspaper. He enjoys being able to read want ads regarding automobiles for sale, and auto parts for sale, and other similar kinds of want ads. He says that he now reads the comics. The Valmont 2000 Program has made a considerable difference in his life at work and in his life at home.

He notes that much of the materials used for instruction is not written at an adult level. Apparently, this is a common problem for people who wait until they are adults before they master the skill of reading.

The employee says that learning to read may make it possible for him to be promoted; learning to read has removed a barrier to a possible promotion.

The employee also commented on the convenience of the learning situation. He was able to do the work as part of job at Valmont. He probably has been aware of his problem for a long time but has never taken any concrete steps to do anything about it. The Valmont 2000 project provided a convenient opportunity to do something about the problem. If it had not been for the Valmont 2000 project, it is not likely that the problem would ever have been addressed.

CASE STUDY # 9

This employee is a 29 year old white male.

Valmont 2000 personnel assigned this employee to the writing class which he had completed prior to the time of this writing. He will take a math class at a later date. He was somewhat skeptical about the class at first, but his attitude improved after attending several sessions of the class.

The writing class had only five persons in it. He feels that it was an advantage to be in a small class. The instructor did lots of group work. The instructor had class members write memos, notes, phone messages and other work related assignments.

He rates the quality of instruction as good. He says that taking the class has improved his punctuation. He says he has become more interested in word meaning and now has an increased awareness of the subject. He says that he is interested in taking more classes.

He says that he thinks the Valmont 2000 project is worthwhile and will have the effect of making him a better employee.

APPENDIX D6

NAME: ____________________________
DATE: __________________________

VALMONT 2000 MATH PRE ASSESSMENT

Part A

Multiply whole numbers		**Divide whole numbers (Show remainders)**	
6 x 897 =	600 x 97	271 ÷ 31 =	89 ÷ 9 =
216 x 93 =	687 x 492	5 8900	75 10820
42 x 82 =		6701 ÷ 70 =	

Part B

Add the following decimals		**Multiply Decimals**	
6.2 + 8.32 + 9.670 =	6.2 + .872	$6.20 x 7	.330 x 3
.08 + 9.006 =	6.8 + .9 =	8 x .6 =	.20 x .02 =
0.861 +3.22		4.20 x .5 =	

Subtract Decimals	
4.06 - 3.1 =	$510.25 -16.08
9.3 - 0.2 =	0.16 - 0.016 =
6.8 - .9 =	

Divide Decimals Work out answers to three places (if necessary) then round to two places.	
7 6.33 =	.63 ÷ .07 =
6.3 ÷ .7 =	8 0.4 =
20 ÷ .5 =	

Part C

Add the Fractions		**Subtract Fractions**	
20 1/6 + 1 4/5	3 1/6 + 8 1/6	1/2 - 2/4 =	7 2/3 - 5/7
3/8 + 1/8 =	4 1/3 + 1/7 =	15 3/5 - 6 1/4	10 - 5 3/16
1/2 + 1 1/4 =		1 1/2 - 3/4 =	

Multiply Fractions		**Divide Fractions**	
1/2 x 3/4 =	4 1/2 x 8 =	1 1/2 ÷ 3/4 =	4 1/2 ÷ 8 =
3/8 x 1/4 =	8 x 1/2 =	3/8 ÷ 1/4 =	8 ÷ 1/2 =
2 3/4 x 1 1/8 =		3/4 ÷ 1 1/8 =	

Part D

Which is greater, less than or equal to? (>), (<), or (=)	
10% of 200 _________ 20% of 100	Round to the nearest tenth of a percent:
80% of 400 _______ 40 % of 80	What percent is 234 of 45?
60% of 100 _______ 50 % of 100	____ % of 120 = 20

Complete this chart	
Fraction Decimal Percent	
____ = .25 = ______	1 1/4 = ____ = ____
4/5 = ____ = _____	_____ = .2 = _____
______ = ____ = 50%	

NAME: ______________________________

DATE: _________________________

VALMONT 2000 MATH PRE ASSESSMENT

Part A

Multiply whole numbers

1. 6 x 897 =

2. 6 x 9 =

3. 42 x 82 =

4. 600
x 97

5. 687
x 492

Divide whole numbers
(Show remainders)

1. 271 ÷ 31 =

2. 5 8900

3. 6701 ÷ 70 =

4. 89 ÷ 9 =

5. 75 10820

Part B

Add the following decimals

1. 6.2 + 8.32 + 9.670 =

2. .08 + 9.006 =

3. 0.861
+3.22

4. 6.2
+ .872

5. 6.8 - .9 =

Multiply Decimals

1. $6.20
x 7

2. 8 x .6 =

3. 4.20 x .5 =

4. .330
x 3

5. .20 x .02 =

Subtract Decimals

1. 4.06 - 3.1 =

2. 9.3 - 0.2 =

3. 6.8 - .9 =

4. $510.25
-16.08

5. 0.16 - 0.016 =

Divide Decimals **Work out answers to three places (if necessary) then round to two places.**

1. 7 6.33 =

2. 6.3 ÷ .7 =

3. 20 ÷ .5 =

4. .63 ÷ .07 =

5. 8 0.4 =

Part C

Add the Fractions

1. 20 1/6
   + 1 4/5

2. 3/8 + 1/8 =

3. 1/2 + 1 1/4 =

4. 3 1/6
   + 8 1/6

5. 4 1/3 + 1/7 =

Subtract Fractions

1. 1/2 - 2/4 =

2. 15 3/5
   - 6 1/4

3. 1 1/2 - 3/4 =

4. 7 2/3
   - 5/7

5. 10
   - 5 3/16

Multiply Fractions

1. 1/2 x 3/4 =

2. 3/8 x 1/4 =

3. 2 3/4 x 1 1/8 =

Divide Fractions

1. 1 1/2 ÷ 3/4 =

2. 3/8 ÷ 1/4 =

3. 3/4 ÷ 1 1/8 =

4. 4 1/2 x 8 =

5. 8 x 1/2 =

Part D

Which is greater, less than or equal to? (>), (<), or (=)

1. 10% of 200 ________ 20% of 100

2. 80% of 400 ______ 40 % of 80

3. 60% of 100 ______ 50 % of 100

Round to the nearest tenth of a percent:

What percent is 234 of 45?

____ % of 120 = 20

4. 4 1/2 ÷ 8 =

5. 8 ÷ 1/2 =

Complete this chart

	Fraction	Decimal	Percent
1.	___	= .25	= _____
2.	4/5	= ___	= _____
3.	_____	= ___	= 50%
4.	1 1/4	= ___	= ____
5.	____	= .2	= ____

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1. Fraction Family Table: Beyond Words Math, Glencoe, 1992.

2. Learning Guide - Fractions: Math Exercises, by Robert Mitchell, 1993.

3. Learning Guides - Reference Information for Percents, Ratios/Proportions: Math Skills Review by Suzanne Chance and Constance E. Hockman, 1989.

4. Learning Guides: Averages and Graphs: GED Mathematics by Susan McClanahan and Donna Amstutz, 1988.

READING

Pre-Assessment Test

SYNONYMS - mean the same, or about the same
For each word listed in Column 1, choose a synonym from Column 2:

Column 1:		Column 2:
1. guarantee	___	A. transmit
2. modify	___	B. evaporate
3. controversy	___	C. inform
4. victorious	___	D. logical
5. notify	___	E. enlarge
6. internal	___	F. dispute
7. convey	___	G. promise
8. vanish	___	H. within
9. magnify	___	I. alter
10. reasonable	___	J. triumphant

ANTONYMS - mean the opposite
For each word listed in Column 1, choose an antonym from Column 2:

Column 1:		Column 2:
1. aggressive	___	A. assist
2. intolerable	___	B. release
3. absence	___	C. everlasting
4. hinder	___	D. timid
5. preserve	___	E. irregular
6. detain	___	F. defense
7. appreciate	___	G. presence
8. offense	___	H. depreciate
9. temporary	___	I. destroy
10. uniform	___	J. bearable

Choose the word that gives the best meaning of the underlined prefix:

1. forecast forefather

a. between
b. from
c. before
d. among

2. malfunction maladjusted

a. among
b. both
c. one
d. bad

3. subzero submarine

a. more
b. among
c. under
d. like

4. antifreeze antibiotic

a. against
b. nearly
c. before
d. more

5. inefficient indirect

a. one
b. not
c. seemingly
d. from

SUFFIXES - word parts added after the word

Choose the word or phrase that gives the best meaning of the underlined suffix:

1. protection destruction

a. place where
b. act of
c. science of
d. person who

2. supervisor coordinator

a. person who
b. more than
c. act of
d. suitable for

3. stronger calmer

a. like
b. after
c. more
d. again

4. fearless odorless

a. like
b. without
c. again
d. nearly

5. maintenance disturbance

a. before
b. from
c. person who
d. act of

CONTEXT CLUES - using hints within the sentence or paragraph to help you define an unknown word

PART I

Select the letter of the word that you feel is CLOSEST to the meaning of the UNDERLINED word:

___ 1. If you stand in the doorway and don't let anyone pass, you will obstruct the exit.

a. block
b. pass
c. doorway
d. stand

___ 2. He expected to win the race; instead, he suffered defeat.

a. embarrassment
b. tiredness
c. a loss
d. with a fever

___ 3. The new rules were imposed, that is, forced on us by our supervisor, but we felt that the rules were not fair.

a. unfair
b. voted on
c. guidelines
d. forced

___ 4. Data (information collected in research) are accurate only if checked carefully.

a. accurate details
b. collected information
c. researches
d. false information

Read the following paragraphs, using whatever context clues there are, to figure out the meaning of each underlined word. Write the letter of the correct definition in the blank below.

The earth's oceans are colossal, so much bigger than the land area, that they cover 70% of the surface of the earth. They give us food and minerals and are a major constituent in the formation of our weather. The extremes of temperature on the earth would be much greater, and many places would be too hot or too cold for humans without the oceans to act as the earth's thermostat.

In some ways, we know more about the stars millions of miles away than we know about the contiguous sea. Why? Partly because oceanography is a comparatively new science, even though the oceans have been fished and traveled by people for thousands of years. Only since World War II have scientists begun carefully to probe the deep parts of the sea to find out what is there.

1. Colossal means _____

a. interesting
b. huge
c. important
d. useful

2. Constituent means _____

a. single cause
b. false clue
c. important part
d. extreme

3. Thermostat means _____

a. cooling system
b. heater
c. regulating device
d. fuel supply

4. Contiguous means _____

a. far-off
b. deep blue
c. stormy
d. nearby

5. Oceanography means _____

a. water safety program
b. formation of waterways
c. study of the sea
d. method of getting power

6. Probe means _____

a. dream about
b. describe
c. examine
d. bomb

Knives and spoons were already in general use when forks were introduced to the general public in England only 250 years ago.

For a long time the use of forks was scorned. Men continued to eat with their fingers, calling forks effeminate. The English clergy even branded them as sacrilegious because they were a substitute for human fingers.

Nevertheless forks slowly gained acceptance. In those days, forks usually had only two tines; these were long and dangerous-looking. If you would see what a Dutch table fork of 1650 looked like, open your cupboard and take out your carving fork. This is a throwback to early table forks, which, in turn, were throwbacks to a vicious twin-pointed battle spear. The four-tined forks that we know today did not come into general use until well over a century ago. As a matter of fact, the four-tined fork is about as new as the steam engine.

1. This article could best be titled:

   a. Tine and Tine Again.
   b. Fingers Are Better.
   c. The Fork Revolution.
   d. Man's Greatest Invention.

2. The fork:

   a. was used in Anglican ceremonies.
   b. took Europe by storm.
   c. was invented by the Dutch.
   d. gained acceptance very slowly.

3. Dutch table forks:

   a. were sometimes used as battle spears.
   b. were used only for carving.
   c. originally had only two tines.
   d. were more efficient than modern forks.

4. Forks:

   a. are the "newest" eating utensils.
   b. used to be four-tined.
   c. are enjoying renewed popularity.
   d. are closely related to spoons.

5. The author uses:

   a. unkind sarcasm.
   b. straightforward examples.
   c. critical remarks.
   d. deep insights.

COMPREHENSION

PASSAGE II

The simple sneeze is actually a complex reaction. The impulse to sneeze, scientifically known as a protective reflex, comes from irritation of a group of nerves in back of the eyes. When the signals reach the brain, the body takes a quick breath, muscles contract violently, and "kerchoo" comes out. Sometimes a sneeze can be stopped by pressing on the bridge of the nose, at the point where the bone ends. There's a tiny nerve there that signals the brain to stop the sneeze, but nobody knows exactly how it works. The odd combination of a breeze and a bright light can also cause sneezing. A skeptical veterinarian once set out to disprove this. He deliberately stood on the beach at Cape Cod in a brisk breeze and stared at the sun's reflection on the water. Sure enough, he started sneezing. Not only that, but his dog did too.

1. The best title for this passage is:

   a. Coughing with a Kick.
   b. Explanation of a Sneeze.
   c. A Skeptic Blows His Theory.
   d. The Winds of Cape Cod.

2. This passage:

   a. describes the beauty of Cape Cod.
   b. shows the foolishness.
   c. explores the cause of a sneeze.
   d. explains the effect of bright light on the protective reflex.

3. Sneezes:

   a. result from the contraction of muscles.
   b. are more harmful to dogs than humans.
   c. can be stopped by pressure on the nose.
   d. are hereditary impulses.

4. The article shows that a sneeze can:

   a. be a symptom of a disease.
   b. protect the body from damage.
   c. occur more often at the beach.
   d. result from various stimuli.

5. The author, in discussing sneezes, uses:

   a. scientific fact.
   b. folklore.
   c. arguments and proof.
   d. unfounded rumor.

COMPREHENSION

PASSAGE III

The locust is perhaps nature's most awesome example of the collective destructive power of a species which, individually, is practically harmless. An adult locust weighs a maximum of two grams - it takes over 225 to outweigh a can of beans. The destructive power is based on two facts. One, each locust can eat its own weight daily. Two, the moving swarm may carpet the ground with anywhere from 30 to 60 locusts a square yard; therefore, a square mile will typically contain from 100 million to 200 million of the creatures. Seldom, furthermore, will a swarm occupy a mere square mile; swarms more than 400 square miles in area have been recorded. A swarm that size weighs more than 80,000 tons and numbers around 40 billion insects eating the weight of the Queen Mary every day it is on the move - and it never stops. As small a number of locusts as one million - two tons of locust! - takes a tremendous toll and each day eats as much as 20 elephants or 500 people. And their voracity is not only in numbers; pound for pound, the locust eats 60 to 100 times as much as a human being.

1. This article is mainly concerned with:

   a. the harmlessness of individual locusts.
   b. the Queen Mary locust plague.
   c. the destructive capacity of locusts.
   d. the importance of locusts to man.

2. Locusts:

   a. existed only in the Bible.
   b. are extremely destructive in swarms.
   c. ate the Queen Mary in one day.
   d. eat as much as twenty elephants.

3. A locust:

   a. can fly over long distances.
   b. always travels in swarms.
   c. is no larger than a bean.
   d. can eat its own weight daily.

4. The destructiveness of locusts in swarms results from all of the following except:

   a. the large area covered by the swarm.
   b. the large number of locusts in a swarm.
   c. their collective voracity.
   d. the extreme weight of a locust swarm.

5. The author uses:

   a. a contrast and comparison.
   b. factual description.
   c. simile and metaphor.
   d. biased opinion.

COMPREHENSION

PASSAGE IV

According to most historians, the ice cream sundae has been on the American scene since the late 1890s, when it first appeared in Evanston, Illinois. Pious city fathers there, resenting the dissipating influence of the soda fountain, passed an ordinance forbidding the sale of ice cream sodas on Sunday. Some ingenious confectioners and drugstore operators, however, got around the law by serving ice cream with syrup -but without the soda.

The soda-less soda, called the Sunday soda, became so popular that orders for "Sundays" began to cross the counters on other days of the week as well. When the town fathers objected to a dish christened after the Lord's day, the spelling was changed to "sundae." Innovators have since added nuts, fruit, whipped cream and cherries. Today a deluxe sundae can cost several dollars and satisfy the hunger of two average eaters.

1. The best title for this selection would be:

   a. Civil Disobedience in Evanston.
   b. The Religious Significance of the Soda.
   c. Confectioners Skirt the Law.
   d. The Origin of the Ice Cream Sundae.

2. Restriction of the sale of ice cream sodas led to:

   a. the dissipation of the soda fountain's influence.
   b. the invention of a new confection.
   c. widespread civil disobedience.
   d. greater religious observance of the Lord's day.

3. The ordinance prohibited the sale of:

   a. ice cream.
   b. syrup.
   c. ice cream sodas.
   d. sundaes.

4. Changing the name of the dish to "sundae" was a:

   a. compromise.
   b. profanity.
   c. restriction.
   d. prohibition.

5. The tone of the passage suggests that the author's attitude on the subject is one of:

   a. disrespect.
   b. nonchalance.
   c. amusement.
   d. solemnity.

READING

Post-Assessment Test

SYNONYMS - Mean the same, or about the same

For each word listed in Column 1, choose a synonym from Column 2:

	Column 1:			Column 2:
1.	danger	___	A.	sign
2.	contribution	___	B.	plentiful
3.	saying	___	C.	reasonable
4.	hinder	___	D.	hazard
5.	timid	___	E.	protect
6.	tolerable	___	F.	block
7.	abundant	___	G.	offering
8.	symptom	___	H.	bearable
9.	logical	___	I.	motto
10.	preserve	___	J.	shy

ANTONYMS - Mean the opposite

For each word listed in Column 1, choose an antonym from Column 2:

	Column 1:			Column 2:
1.	internal	___	A.	cowardly
2.	temporary	___	B.	cheap
3.	presence	___	C.	offense
4.	courageous	___	D.	appear
5.	similar	___	E.	boredom
6.	expensive	___	F.	external
7.	vanish	___	G.	permanent
8.	excitement	___	H.	defeat
9.	victory	___	I.	absence
10.	defense	___	J.	different

PREFIXES - Word parts added before the word
Choose the word that gives the best meaning of the underlined prefix:

1.. indecent incorrect

a. seemingly
b. from
c. not
d. one

2. malnutrition malformed

a. one
b. bad
c. among
d. both

3. forebode foreseen 4. submerse subsoil

a. before
b. from
c. among
d. between

a. like
b. under
c. among
d. more

5. antisocial anticancer

a. nearly
b. more
c. before
d. against

SUFFIXES - Word parts added after the word
Choose the word or phrase that gives the best meaning of the underlined suffix:

1. helpless penniless2. instruction corruption

a. nearly
b. like
c. without
d. again

a. act of
b. person who
c. science of
d. place where

3. dependence preference

a. from
b. act of
c. before
d. person who

4. trainer follower

a. more than
b. place where
c. person who
d. act of

5. goodness firmness

a. again
b. without
c. after
d. state of being

CONTEXT CLUES - Using hints within the sentence or paragraph to help you define an unknown word.

PART I

Select the letter of the word that you feel is CLOSEST to the meaning of the UNDERLINED word:

___ 1. When you trade an object or service that you do not need or want for another one that you do need or want, you are part of a barter system.

a. dividing line
b. system
c. trade
d. unneeded goods

___ 2. We were expected to lose the game, but fought hard for a victory.

a. laugh
b. good time
c. win
d. smart play

___ 3. The speaker used colorful illustrations - photographs and drawings - to help us remember how to arrange a flower garden.

a. words
b. garden tools
c. listeners
d. drawings or photographs

___ 4. Anthropology (the science of human origin) can instruct us, but sometimes adds to our confusion.

a. science of man's origin
b. instruction
c. rules
d. confused study

PART II

Read the following paragraphs, using whatever context clues there are, to figure out the meaning of each underlined word. Write the letter of the correct definition in the blank below.

As our supply of fresh water becomes more and more scarce, we have naturally looked to the oceans, the greatest source of water on earth. But there is so much salt in sea water that it is not fit for human consumption. Scientists have been trying to find ways to turn this saline water into fresh water. Machines for the conversion of water are already at work in certain parts of the world, but their cost is still exorbitant. Science will have to find much cheaper ways to do the job.

Possibilities for food abound in the ocean. In addition to the hundreds of varieties of fish, some kinds of seaweed can be eaten. Or plankton could easily be nurtured and harvested as a crop. So far, though, this floating mass of microscopic plants and animals is considered pretty much inedible. It's nutritious enough, containing many proteins, vitamins, and minerals that humans need for survival, but so far no one has been able to figure out how to disguise its awful taste.

1. consumption means _____
   a. medicine b.. use
   c. study d. waste

2. saline means ____
   a. salty b. dirty
   c. very cold d. unneeded

3. conversion means ____
   a. use b. change
   c. drying up d. manufacture

4. exorbitant means ____
   a. cheap b. unknown
   c. sensible d. much too high

5. abound means ____
   a. are few b. do not exist
   c. are many d. are destroyed

6. inedible means ____
   a. not fit to eat b. nourishing
   c. popular d. hard to grow

COMPREHENSION PASSAGE I

When apples are made into cider, they are first washed, and then fed into a grinder and reduced to a pulp which is called "cheese." In horse-and-buggy days most farms used mail-order hand-grinders. Nowadays, these are hard to come by, but for small batches, a hand meat-grinder will do. In any case, the youngest and most energetic members of the crew can usually be induced to take over this phase of the operation.

The next and crucial step is to place the "cheese" in the press. When a simple hand screw-press is used, the apple pulp may be held in a slatted basket. In a cider mill's hydraulic press, the "cheese" is placed in cloths on slatted frames which are stacked one upon the other. In either type, the juice passes between the slats and is collected at the base of the press as cider.

The pressed pulp, called pomace, must be disposed of at once, for this pomace will attract every buzzing yellowjacket within miles.

1. This selection is mostly about apple cider and its
   a. history.
   b. usefulness
   c. production.
   d. variety.

2. Basically, apple cider is made by
   a. squeezing the "cheese" through a press and collecting the juice.
   b. cutting the apples into pieces and soaking them in water.
   c. boiling the juice out of the 'cheese."
   d. grating the "cheese" and letting the juice drip out naturally.

3. The pressed pulp is
   a. made into cider.
   b. used in baking.
   c. thrown out.
   d. squeezed a second time.

4. Cider pressing is
   a. a fun sport.
   b. a backbreaking task.
   c. an involved process, using both people and machines.
   d. an interesting and unusual way of preserving apples.

5. The author explains cider pressing through
   a. a series of images.
   b. a description of the process.
   c. an explanation of its history.
   d. a set of examples.

COMPREHENSION PASSAGE II

The dabb, a big lizard of eastern Saudi Arabia, is a two-foot long, heavy-bodied creature with a spine-covered tail. Living in deep burrows often seen in hard, gravely terrain, the dabb is edible with meat resembling tough lamb. Desert dabb fanciers, who now drive pickup trucks instead of camels, sometimes capture them by extending a hose from their car's exhaust pipe into the burrow. The groggy lizard soon staggers out and is easily captured. A cornered dabb puts on a ferocious display, with much hissing and puffing, and his thrashing tail can inflect painful bruises. But generally he is a fraud; if careful, you can capture him by hand. The dabb is primarily a vegetarian. Its body color varies from slate-gray to bright yellow - according to changes in temperature apparently - and it is capable of sprinting almost as fast as a man can run.

1. This passage focuses on the
   a. desert dabb hunters.
   b. spiny-tailed desert creature.
   c. mating habits of the dabb.
   d. burrowing of dabbs.

2. The dabb is
   a. a large, fairly harmless lizard.
   b. small enough to be held in the hand.
   c. eaten in Arabia in preference to lamb.
   d. extremely dangerous when cornered.

3. Some people capture dabbs by making them
   a. groggy from hissing and puffing.
   b. run into a dabb-trap.
   c. breathe exhaust fumes.
   d. sprint until exhausted.

4. The dabb may avoid capture
   a. by escaping to his deep burrow.
   b. because he is so ferocious.
   c. by sprinting as fast as the captor can run.
   d. by changing his color.

5. The author uses
   a. hearsay.
   b. factual description.
   c. contrast.
   d. arguments and proof.

COMPREHENSION PASSAGE III

In Medina, the Prophet Muhammad found, at last, the faith and unshakable support denied him by his own tribe, the Quraish of Mecca. In Media, were revealed to Muhammad the concluding suras (chapters) of the Koran, the foundation of the Moslem religion, Islam. In that city, Muhammad planned, and fought nearby, the three decisive battles against his Meccan foes. And from Medina, he launched the hosts of believers, ten thousand strong, who saved his opponents into lasting submission. In Medina, Muhammad lived the final decade of his life, and there he died and was buried. From Medina the first three Caliphs, or successors of the Prophet, ruled the Arab empire.

So significant is Muhammad's arrival in Medina from Mecca in 622 a.d. that the chronology of Islam resets upon that single momentous event. The very name Medina, which in Arabic means simply "The City" without further qualifications, eloquently attests to its importance. Yet outside Islam, the crucial role it played in the development of a religion whose 45 million followers girdle the earth is all but unknown.

1. This passage is mainly about
   a. Muslims.
   b. Islam.
   c. Medina.
   d. the Koran.

2. According to the passage, Medina is
   a. an insignificant city.
   b. the birthplace of Muhammad.
   c. an important city in Islamic culture.
   d. a country in Arabia.

3. Which of the following did not happen to Muhammad in Medina?
   a. His birth.
   b. The revelation of parts of the Koran.
   c. His death.
   d. Acceptance and belief in his readings.

4. The passage indicates that
   a. Islam is the world's largest religion.
   b. Islam was not readily accepted by all.
   c. Muhammad was the first Caliph.
   d. Medina is the most important city in the Arab world.

5. What does the author use t[illegible]port the main idea of his passage?
   a. Comparison.
   b. Logic.
   c. Facts.
   d. Arguments.

COMPREHENSION PASSAGE IV

In the heart of the desert, rain may not occur at all in a whole year. In summer, heat is scorching. July means temperatures - the figure midway between the highest and lowest readings each day - sometimes exceed 95 degrees. Shade temperatures of 120 degrees are by no means unusual; and in winter, bitterly cold days are not rare.

For mammals, these conditions mean trouble. Vegetation is extremely sparse, creating a food problem and making concealment from predators difficult. (Conversely, of course, predatory animals have greater difficulty in approaching and capturing their prey, undetected.) This lack of cover is a reason why nearly all desert mammals are nocturnal, leaving the security of their burrows or lairs only under the protection of darkness.

1. This passage is concerned with
   - a. survival methods of desert animals.
   - b. the effect of desert weather upon vegetation.
   - c. weather conditions in the desert.
   - d. the problems of mammals resulting from desert conditions.

2. The mammal on the desert is
   - a. very likely to starve to death.
   - b. an easy victim of predators.
   - c. faced with problems caused by the environment.
   - d. basically a predator.

3. The weather conditions in the heart of the desert are such that
   - a. rain is frequent.
   - b. the temperatures reach both high and low extremes.
   - c. summers and winters are scorching.
   - d. standing in the shade is the only means of escaping the unbearable heat.

4. The desert predators have difficulty in getting to their prey because of the
   - a. difficulty of concealment.
   - b. darkness of the nights.
   - c. scorching heat.
   - d. dense vegetation.

5. The author develops his point by the use of
   - a. comparison and contrast.
   - b. cause and effect.
   - c. common sense.
   - d. logical reasoning.

READING CURRICULUM CREDITS

1. Comprehension Drills (and pre, mid, post test passages) from *Six-Way Paragraphs* by Walter Pauk, 1974.
2. Main Idea Practice from *Read to Succeed*, McGraw-Hill, 1980.
3. Context passage (on pre and post tests) from *Reading Tactics B*; Scott, Foresman; 1981.
4. Context sentences (on pre and post tests) adapted from *Basic Reading Skills Handbook*, Houghton Mifflin, 1988.
5. Learning Guides (Main Idea; Following Directions; Locating Details, Drawing Conclusions) from *Reading Skills Review*, McGraw-Hill, 1989.

Unknown Sources
Previewing Activity
SQ3R Activity

Essay Assessment

Directions

The Essay Assessment is intended to determine how well you write. You are asked to write an essay that explains something or presents an opinion on an issue. In preparing your essay, you should take the following steps:

1. Read carefully the directions and the essay topics given below.
2. Pick only one of the topics.
3. Plan your essay carefully before you write.
4. Use scratch paper to make any notes.
5. Write your essay on the lined pages of the separate answer sheet.
6. Read carefully what you have written and make any changes that will improve your essay.
7. Check your paragraphs, sentence structure, spelling, punctuation, capitalization, and usage, and make any necessary corrections.

You will have 45 minutes to write on the topic below. Write legibly so that the evaluators will be able to read your writing.

Your essay will be scored by at least two trained evaluators who will judge it according to its overall effectiveness. They will judge how clearly you make the main point of your essay, how thoroughly you support your ideas, and how clearly and correctly you write throughout the essay.

Topic A

Topic B

ESSAY POST ASSESSMENT

Directions

The Essay Assessment is intended to determine how well you write. You are asked to write an essay that explains something or presents an opinion on an issue. In preparing your essay, you should take the following steps:

1. Read carefully the directions and the essay topic given below.
2. Plan your essay carefully before you write.
3. Use scratch paper to make any notes.
4. Write your essay on the lined pages of the separate answer sheet.
5. Read carefully what you have written and make any changes that will improve your essay.
6. Check your paragraphs, sentence structure, spelling, punctuation, capitalization, and usage, and make any necessary corrections.

You will have 45 minutes to write on the topic below. Write legibly so that the evaluators will be able to read the writing.

Your essay will be scored by at least two trained evaluators who will judge it accordingly to its overall effectiveness. They will judge how clearly you make the main point of your essay, how thoroughly you support your ideas, and how clearly and correctly you write throughout the essay.

TOPIC

Surveys show that most Americans are, for the most part, satisfied with their jobs. What is it about your job here at Valmont that you like?

Identify the one aspect of your job you enjoy the most. Write an essay of about 200 words describing this one aspect and explaining why you enjoy it. Provide reasons and specifics to support your opinion.

WRITING CURRICULUM CREDITS

1. Learning Guide Review Quizzes: GED Writing Skills by Susan McClanahan and Donna Amstutz, 1988.

2. Learning Guide: Capitals - Writing for Workplace Success by Gary McLean and Art Lyons, 1991.

APPENDIX D7

Proofreading Guide

for Valmont Industries, Inc.

____
(name)

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Common Sentence Errors:

Spelling

Correct spelling is essential to effective communication. A misspelled word can distract the reader, cause misunderstandings and send a negative message about the writer and Valmont Industries, Inc. Because no spelling guidelines are foolproof, only one thing can improve your spelling: use of a dictionary.

Subject-verb agreement

Use a singular verb with a singular subject and a plural verb with a plural subject.

> The four workers have a photocopy of their notes.
> Ms. Downs was late for her appointment.

Note: In the first sentence, the plural subject (workers) takes a plural verb (have). In the second sentence, the singular subject (Ms. Downs) takes a singular verb (was).

This is the general rule; variations are discussed below.

Company Names

Most of the time, company names are singular.

> C & S Sales is listed in the directory.

There/Here

In sentences that begin with a there or a here, the true subject follows the verb.

> There is no reason for his behavior.
> Here are the reports you requested.

Intervening Words

Disregard any words that come between the subject and verb when creating agreement.

> One of them prefers to be transferred.
> The basis for many of the problems is the way we look at them.

Fragments

A fragment is a group of words that looks like a sentence, with a capital letter at the beginning and a period at the end, but that lacks an essential sentence element-either a subject or a verb. Some fragments are acceptable for emphasis:

> You would think that after 50 hours at a terminal, you would have a working program. *Wrong again.*

Most of the time fragments are errors that mislead the reader and indicate a careless author. Avoid them in formal writing.

> Error: The reason being that industrial growth did not outpace the inflation rate.
>
> One possible correction: The reason is that industrial growth did not outpace the inflation rate.

Run-together Sentences

Run-together sentences occur when two sentences are joined with no punctuation between them or with only a comma connecting them.

> It rained every day we never left the hotel.
> It rained every day, we never left the hotel.

Run-together sentences, like these, are often confusing for the reader, who normally does not expect to see sentences joined this way and must stop and sort out what is being said.

❖ Ways of Correcting Run-together Sentences ❖

(See page 7 which explains punctuation of joining words.)

- *Use a coordinating conjunction.* One way of showing the relationship between sentences is by joining them with a coordinating conjunction.

  > I would like to buy a car, *but* I can't afford one.

- *Use a subordinator.* You can use a subordinator at the beginning of a sentence or in between two sentences.

  > *Although* I would like to buy a car, I can't afford one.
  > I would like to buy a car *although* I can't afford one.

- *Use a transition word.* Remember that these do not really join sentences together, so if you use a transition word or phrase, you will need a semi-colon or period.

  > I thought the computer would cost 1,200; however, I was incorrect.
  > I thought the computer would cost 1,200. However, I was incorrect.

- *Use a semi-colon.* As has been shown above, a comma is not sufficient to join two sentences, but a semi-colon *is* enough. In fact, one way of looking at a semi-colon is to think of it as a heavy-duty comma, strong enough to join two sentences.

> It was sundown; my long, exhausting day was finally over.

Homonyms

Homonyms are words that sound alike but do not mean the same thing and are, therefore, not spelled alike. The "soundalikes" are not interchangeable. If you use the wrong form in a sentence, you will confuse or mislead your reader.

Affect/Effect

Affect is most frequently used as a verb meaning to influence:

> The inflation rate *affects* unemployment.

Effect is most frequently used as a noun meaning a result or a consequence:

> The *effect* of spiraling inflation was an increase in unemployment.

Its/It's

Its shows possession:

> This accounting system has outlived *its* usefulness.

It's is a contraction of it is or it has:

> *It's* clear that his accounting system is not working.

Personnel/Personal

Personnel are the persons working for a given organization:

> He deals effectively with *personnel* issues [those regarding employees].

Personal means private:

> Her *personal* life [her private life] is a mess.

Than/Then

Than is used for a comparison:

The new computer is more powerful than the new one.

Then is used to show condition or time relationships:

If you enjoy your work, *then* you won't dread getting up in the morning.

Their/There/They're

Their shows possession:

Their company is doing quite well.

There indicates direction or is a way of introducing a thought:

There are three kinds of delivery systems.

They're is a contraction of *they are*:

They're more trouble than *they're* worth.

Two/To/Too

Two indicates the number 2:

Two years from now I want to be working somewhere else.

To shows location or is part of a verb:

I need *to* go *to* the store after work.

Too means *very* or *also*:

I am *too* sick to eat.

Your/You're

Your indicates possession:

Your writing can improve with practice.

You're is a contraction of *you are*:

You're reading this sentence.

Punctuation

Apostrophes

Apostrophes Indicating Possession: At the end of a singular word, or of a plural word that does not end in *s*, add an apostrophe plus *s* to indicate possession.

The people's candidate won.
The chainsaw was Bill's.
The men's locker room burned.
The car's paint was ruined.

Apostrophes Indicating a Contraction: An apostrophe shows that you have omitted one or more letters when you have combined two words together.

I am	I'm
He is	He's
You are	You're
Is not	Isn't
Do not	Don't

Capitalization

Capitalize the following:

titles of people	Safety Systems Supervisor
books	*Moby Dick*
languages	English, Spanish
days of the week	Monday
the months	April
holidays	Christmas
names of organizations or groups	Valmont Industries, Inc.

Commas

Commas Separate Items (Words, Phrases, or Sentences) in a Series. Use a comma to separate items in a series.

Sam, Joe, and Marsha will be joining the Valmont 2000 project.
The office was yellow, orange, and red.
The new employees complained that the hours were too long, the pay was too low, and that the work was too boring.

Commas Set Off Introductory Phrases. Phrases that begin a sentence can be set off with a comma.

Moving quickly, Valmont won the multi-million dollar project.
In other words, you're fired.
In fact, the finished work was superb.
Mary, you've done a great job.

Commas Set Off Parenthetical Elements. Items that interrupt the flow of the sentence are called parenthetical and are enclosed by commas.

The deluxe model, of course, is more expensive.
Your report, by the way, was impeccable.
Martha Jark, our new president, is overhauling personnel policies.
Our warranty, however, does not cover damage caused during delivery.

Commas Set Off Quoted Material. Quoted items included within a sentence are often set off by commas.

The customer said, "I'll take it," as soon as he laid eyes on our new product.

Commas Are Used In Other Common Practices.

Commas are used to set off the day of the month from the year in a date.

July 27, 1993

Commas are used to set off the date in a sentence.

December 15, 1999, is my date of retirement.

Commas are also used to set off the street, city, and state in an address.

The bill was sent to Carl Jett, 184 Sea Street, Albany, New York 01642.

No commas are used when the address is divided into different lines, except the one between the city and state.

Carl Jett
184 Sea Street
Albany, New York 01642

Joining Words

Coordinating Conjunctions

For
And
Nor
But
Or
Yet
So

(Remember the word, FANBOYS.)

Subordinators

although
though
even though
whereas
while
because
since
as
if
unless
after
before
until
when
as soon as

Transition Words

however
therefore
thus
moreover
then
also
nonetheless
nevertheless
for example
on the other hand
consequently
otherwise
in addition

1.) S, cc S.
or
S. Cc S.

2.) sub S, S.
and
S sub S.

3.) S; tw, S.
or
S. Tw, S.

[S=sentence]

1.) Coordinating conjunctions may join independent sentences. When they do, put a comma in front of the coordinating conjunction. Coordinating conjunctions may also introduce sentences.

> Cindy likes writing memos, but John prefers talking on the telephone.
>
> Cindy likes writing memos. But John prefers talking on the telephone

2.) Subordinators can join two sentences. When the subordinator is at the beginning, put the comma after the first "sentence." When the subordinator is in the middle, a comma is not needed.

> While Cindy likes getting to work at 7:30, John prefers arriving at 8:00.
>
> John prefers arriving at 8:00 while Cindy likes getting to work at 7:30.

3.) Transition words don't actually join sentences and may be placed within or at the end of a sentence instead of at the beginning of it.

> Cindy likes jogging Saturday afternoons; however, John usually takes a nap.
>
> Cindy likes jogging Saturday afternoons. However, John usually takes a nap.

Scoring Sheet for Essay Assessment

Student Name ________________________

Topic ________________________

Directions:

1. Read the essay without marking it.
2. Determine its score using a scale of 1 to 4, four being the highest and one the lowest.
3. Write the score on the back of this page under the appropriate flap.
4. Fold flap back.
5. Print your name in the Reader Box.
6. Once an essay has had two readers, give the essay to Ken Jones.

Reader #1 ________________________

Reader #2 ________________________

Reader #3 ________________________
(if needed)

Reader #3's Score --

Final Score --

Reader #1 **Reader #2**

APPENDIX D8

VALMONT 2000
SUPERVISOR SURVEY

The questions in this survey are for research and developmental purposes and will be used by Metropolitan Community College to assist in evaluating the Valmont 2000 project. The confidentiality of your responses will be maintained at all times.

Name: ____________________ **Job Title:** ____________

Department Name: ___________________ **Department #:** ___________

Work Phone Ext: ____________________ **Age:** ___________________

How many years have you worked at Valmont?

_____ **0 to 5 years** _______ **16 years and over**

_____ **6 - 10 years**

_____ **11 - 15 years**

Instructions: Circle the number on the line that best describes your response to the question. Note that some items have agree/disagree responses and some have other types of responses.

Part I: Value of Reading, Writing and Math Training

1. Reading training provided by Valmont 2000 has improved the reading skills of employees.

1	2	3	4	5
Strongly disagree		Neither Agree nor Disagree		Strongly Agree

VALMONT 2000
SUPERVISOR SURVEY

The questions in this survey are for research and developmental purposes and will be used by Metropolitan Community College to assist in evaluating the Valmont 2000 project. The confidentiality of your responses will be maintained at all times.

Name: ____________________ **Job Title:** ____________

Department Name: ____________________ **Department #:** ____________

Work Phone Ext: ____________________ **Age:** ____________________

How many years have you worked at Valmont?

______ **0 to 5 years** _______ **16 years and over**

______ **6 - 10 years**

______ **11 - 15 years**

Instructions: Circle the number on the line that best describes your response to the question. Note that some items have agree/disagree responses and some have other types of responses.

Part I: Value of Reading, Writing and Math Training

1. Reading training provided by Valmont 2000 has improved the reading skills of employees.

1	2	3	4	5
Strongly disagree		Neither Agree nor Disagree		Strongly Agree

2. In regard to the employees that you supervise, and considering only the reading instruction provided, which response best describes the results of their participation in the program.

1	2	3	4	5
I have seen no examples of improved performance	I have seen at least one example of improved performance	I have seen at least two examples of improved performance	I have seen more than two examples of improved performance	I have seen many examples of improved performance

3. From conversations with employees that you supervise, have they told you that the reading instruction had caused them to read better or to be more interested in reading.

1	2	3	4	5
I have seen no examples of improved performance	I have seen at least one example of improved performance	I have seen at least two examples of improved performance	I have seen more than two examples of improved performance	I have seen many examples of improved performance

4. Writing training provided by the Valmont 2000 program has improved the writing skills of employees.

1	2	3	4	5
Strongly disagree		Neither Agree nor Disagree		Strongly Agree

5. In regard to employees that you supervise, and considering only the writing instruction provided, which response best describes the results of their participation in the program?

1	2	3	4	5
I have seen no examples of improved performance	I have seen at least one example of improved performance	I have seen at least two examples of improved performance	I have seen more than two examples of improved performance	I have seen many examples of improved performance

6. From conversations with employees that you supervise, have they told you that the writing instruction has caused them to write better or to be more interested in writing.

1	2	3	4	5
I have not heard of any such instance	I have heard of at least one instance	I have heard of at least two instances	I have heard of more than two instances	I have heard of many instances

7. Math training provided by the Valmont 2000 program has improved the math skills of employees.

1	2	3	4	5
Strongly disagree		Neither Agree nor Disagree		Strongly Agree

BEST COPY AVAILABLE

8. In regard to the employees that you supervise, and considering only the math instruction, which response best describes the results of their participation in the program.

1	2	3	4	5
I have seen no examples of improved performance	I have seen at least one example of improved performance	I have seen at least two examples of improved performance	I have seen more than two examples of improved performance	I have seen many examples of improved performance

9. From conversations with employees that you supervise, have they told you that the math instruction has caused them to do math better or to be more interested in math.

1	2	3	4	5
I have not heard of any such instance	I have heard of at least one instance	I have heard of at least two instances	I have heard of more than two instances	I have heard of many instances

PART II: Improved Work Skills and Work Related Skills

10. Valmont 2000 training has improved the performance of employees in JIT meetings, Project Impact meetings, and other meetings.

1	2	3	4	5
Don't Think so		Maybe, but hard to tell		Definitely

11. Valmont 2000 training has improved the performance of employees in filling out forms.

1	2	3	4	5
Don't Think so		Maybe, but hard to tell		Definitely

12. Valmont 2000 training has improved employee performance in their use of E-mail.

1	2	3	4	5
Don't Think so		Maybe, but hard to tell		Definitely

13. Valmont 2000 training improves the participants confidence level when approaching changes on the job.

1	2	3	4	5
Don't Think so		Maybe, but hard to tell		Definitely

14. Valmont 2000 training has helped participants to be better qualified for advancement.

1	2	3	4	5
Don't Think so		Maybe, but hard to tell		Definitely

15. Valmont 2000 training has helped participants to be better qualified for cross-training.

1	2	3	4	5
Don't Think so		Maybe, but hard to tell		Definitely

16. Valmont 2000 participants have increased their reading and writing related to safety.

1	2	3	4	5
Don't Think so		Maybe, but hard to tell		Definitely

17. Valmont 2000 has helped its participants decrease the number of reworks/rejects.

1	2	3	4	5
Don't Think so		Maybe, but hard to tell		Definitely

18. Valmont 2000 has helped its participants to become more productive in their jobs.

1	2	3	4	5
Don't Think so		Maybe, but hard to tell		Definitely

19. Valmont 2000 has helped its participants to work more efficiently.

1	2	3	4	5
Don't Think so		Maybe, but hard to tell		Definitely

PART III - GENERAL QUESTIONS

20. Considering the entire Valmont 2000 program, which response best agrees with your observations regarding performance of employees.

1	2	3	4	5
I have seen no examples of improved performance	I have seen at least one example of improved performance	I have seen at least two examples of improved performance	I have seen more than two examples of improved performance	I have seen many examples of improved performance

21. In conversations with the employees that you supervise, have they told you that they were doing better work because of their participation in the Valmont 2000 program.

1	2	3	4	5
None have told me that their work is better	At least on has told me that their work is better	at least two have told me that their work is better	more than two have told me that their work is better	Many have have told me that their work is better.

22. Valmont 2000 has helped increase interest in outside education.

1	2	3	4	5
Strongly disagree		Neither Agree nor Disagree		Strongly Agree

23. Valmont 2000 has helped increase the number of tuition reimbursement requests.

1	2	3	4	5
Strongly disagree		Neither Agree nor Disagree		Strongly Agree

24. Considering the entire Valmont 2000 program, the morale of employees has improved.

1	2	3	4	5
Strongly disagree		Neither Agree nor Disagree		Strongly Agree

25. Employees who participated in Valmont 2000 training are supportive of the program.

1	2	3	4	5
Strongly disagree		Neither Agree nor Disagree		Strongly Agree

26. All things considered, Valmont 2000 has been beneficial to Valmont employees.

1	2	3	4	5
Strongly disagree		Neither Agree nor Disagree		Strongly Agree

27. Valmont 2000 participants have made positive comments about their training.

1	2	3	4	5
Strongly disagree		Neither Agree nor Disagree		Strongly Agree

28. The overall effect of the Valmont 2000 program has been to improve the performance of employees.

1	2	3	4	5
Strongly disagree		Neither Agree nor Disagree		Strongly Agree

29. Valmont 2000 participants would be willing to come forward and share their feelings about their training.

1	2	3	4	5
Strongly disagree		Neither Agree nor Disagree		Strongly Agree

PART IV: NARRATIVE AT THE END OF EACH SECTION

30. Have you observed examples of behavior by Valmont 2000 participants that suggest application of their training. If so, please cite.

31. Not all of the employees had to attend classes because their scores were high enough to show that they did not need the classes. Did the fact that some employees did not have to attend classes create a problem where some employees were identified as "smart" or "dumb." Comment on this.

32. Sometimes you had to send some of your employees out for testing, counseling, and for attendance at classes. Did this cause you any important problems? Do you have any suggestions for handling this in some better way?

33. Do you have any suggestions as to how the Valmont 2000 program could be improved? For example, additional services, better information, better communication, etc.

APPENDIX D9

INSTRUCTOR SURVEY ON THE VALMONT 2000 PROGRAM

DIRECTIONS: Please answer the questions that follow. Feel free to write additional comments on another sheet of paper. Return the completed survey by 9/2/94.

The Purpose of this survey is to solicit your opinions on the effectiveness of the Valmont 2000 Training Program. Your responses will be grouped with the other instructors. Thank you for your responses.

PART 1: INSTRUCTIONAL MATERIALS

1. In your opinion, how effective were the learning guides as instructional materials for adult learners?

2. In your opinion, how effective was the interactive video program as an instructional tool?

3. In your opinion, how effective was the Valmont 2000 IEP/Career Plan for Individualizing instruction and reporting student information?

4. In your opinion, how effective was the Data Transmittal Sheets and the Required Competencies for the job reporting sheets for curriculum development?

5. In your opinion, how effective were the work problems as instructional materials?

6. In your opinion, how effective were the textbooks as instructional materials?

7. In your opinion, how satisfied were you with the availability of other resources such as books, paper, and other supplies?

8. In your opinion, did you feel that the curriculum was responsive to the needs of the learner/teacher?

PART II: EVALUATION

9. In your opinion, how effective were the informal assessments as pre/post measurements of student progress?

10. In your opinion, how effective were the TABE tests as a screening tool in to the Valmont 2000 program and as an assessment of student improvement?

11. In your opinion, how effective were the unit/midterm tests in measuring student progress?

PART III: ADMINISTRATIVE

12. In your opinion, how effective was the evaluation process (self-evaluation, peer evaluation, teacher/teacher assistant evaluation, supervisor evaluation and feedback session) for your professional development?

13. In your opinion, how effective was the scheduling process for the training sessions?

14. In your opinion, how effective was the physical classroom environment for facilitating learning?

15. In your opinion, what effect did the instructor-to-student ratio have on your ability to provide instruction?

16. In your opinion, what do you believe was the impact of Valmont 2000 training on the employees. Please cite examples.

17 In your opinion, how beneficial were the faculty meetings, in terms of providing input to the program and interaction with other staff.

18. In your opinion, how responsive were the administrators of the program in responding to your concerns (academic, professional, etc.)?

PART IV: MISCELLANEOUS

19. In your opinion, what were the strengths of the Valmont 2000 Workplace Literacy Program?

20. In your opinion, what were the areas in need of improvement?

21. In your opinion, do you feel Valmont Industries, Inc. demonstrated a commitment to Valmont 2000?

22. In your opinion, do you feel Metropolitan Community College demonstrated a commitment to Valmont 2000?

23. What specific suggestions would you offer to improve the program?

24. In your opinion, how effective were the staff training opportunities to prepare you for teaching in the workplace?

In order for me to follow-up on any of your responses, please sign your name.

RESPONDENT'S NAME: ______________________

APPENDIX D9

INSTRUCTOR SURVEY
VALMONT 2000 PROGRAM

DIRECTIONS: Please answer the questions that follow. Feel free to write additional comments on another sheet of paper. Return the completed survey by 9/2/94.

The Purpose of this survey is to solicit your opinions on the effectiveness of the Valmont 2000 Training Program. Your responses will be grouped with the other instructors. Thank you for your responses.

PART 1: INSTRUCTIONAL MATERIALS

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8. In your opinion, did you feel that the curriculum was responsive to the needs of the learner/teacher?

PART II: EVALUATION

9. In your opinion, how effective were the informal assessments as pre/post measurements of student progress?

10. In your opinion, how effective were the TABE tests as a screening tool in to the Valmont 2000 program and as an assessment of student improvement?

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19. In your opinion, what were the strengths of the Valmont 2000 Workplace Literacy Program?

20. In your opinion, what were the areas in need of improvement?

21. In your opinion, do you feel Valmont Industries, Inc. demonstrated a commitment to Valmont 2000?

22. In your opinion, do you feel Metropolitan Community College demonstrated a commitment to Valmont 2000?

23. What specific suggestions would you offer to improve the program?

24. In your opinion, how effective were the staff training opportunities to prepare you for teaching in the workplace?

In order for me to follow-up on any of your responses, please sign your name.

RESPONDENT'S NAME: ____________________

APPENDIX E1

VALMONT 2000 WORKPLACE LITERACY PROJECT UPDATE

Job Analyses, TABE Testing, and TABE Results Sessions have been completed for the employees in the twenty-five jobs in Phase 1 of the project. For employees in the 21 of the 25 jobs scheduled for completion in Phase 2, job analyses, TABE testing and TABE Results Sessions have been conducted. Progress is being made on the remaining four jobs with a completion date set for sometime during June, 1994.

TABE Tests have been given to 357 individuals on the shop floor, all employees have had their TABE Results Sessions with a Valmont 2000 counselor.

Classes are currently being held in math, writing, reading, and developmental reading. The enrollment for the pilot class consisted of 9 individuals. In the first session 86 employees completed training classes. One hundred and forty employees were enrolled in Session 2. The current session, Session 3, has 47 participants. Class schedules for Sessions 4 and 5 are currently being reviewed with the supervisors. For these sessions, 351 participants have been identified. The total projected number of class participants could reach 633 within the current grant period.

Action teams have taken the following steps toward completion of the additional grant objectives listed below:

Distance Learning -	The distance learning Action Team has investigated technologies currently available and are in the process of determining costs for several alternatives. The team has reviewed the TV courses which are available and found they are not appropriate for the current skill levels.
Evaluation -	The Evaluation Action Team surveyed other companies to determine if current evaluation measures were complete. They found that Valmont 2000 evaluation measures were more inclusive than most others. The evaluation system focuses on student measures to include: 1) pre and post testing with the TABE, 2) in-class pre and post assessments, 3) instructor's written evaluations, 4) communications skills survey, and 5) a multi-purpose survey on the job satisfaction, organizational commitment, and self-efficacy which is administered at three different times during the training process. Instructors and Instructional Assistants are evaluated using a 360° performance evaluation system to include peer, supervisor, and student input. Another component of the evaluation system includes company-wide evaluation measures to look at the effect of the Valmont 2000 program on such things as 1) production, 2) quality, 3) scrap-rates, 4) safety, and 5) the use of the tuition reimbursement program. A supervisor/management survey is also in development.
Orientation Video -	An information video for the orientation of class participants will be completed in April. This product will include not only input from Valmont management, and the Valmont 2000 staff but also testimonials from former class participants regarding the program.

Instructional Associate/
Mentoring Programs - Several Instructional Assistants have been hired and recruitment efforts are ongoing for additional staff. Instructional Assistant orientation packets have been developed as well. Instructional Assistants are assisting within the classroom under the supervision and guidance of the class instructors. This program has been very successful and will be further developed in the next two sessions.

The Mentoring program has been conceptualized and a pilot group of 7 individuals have been selected for participation. Their training will occur in April. A mentoring handbook has also been developed.

A renewal request has been submitted in order to continue the Valmont 2000 workplace literacy grant. Some changes/enhancements will be implemented if the renewal is received to include a cooperative effort with small businesses in the Omaha area.

Valmont 2000 update

TABE TESTING

	IRRIGATION	ICPD
442 persons	262	180

JOB ANALYSIS

	IRRIGATION	ICPD
25 jobs in Phase 1 have been completed	14	11
25 jobs in Phase 2 have been completed	13	12

CLASSES

475 class units have been identified as needing classes

IRRIGATION	ICPD
228	247

Through Sessions One through Four 435 students have been in classes (* dual enrollment)

320 students are pre-registered for session 5.

IRRIGATION	ICPD
233	87

VALMONT 2000 UPDATE

You may have heard about Valmont 2000 and our partnership with Metropolitan Community College. The following information is being provided in order to keep you up-to-date on what's happening with this project.

Job Analyses are being completed for the Slitter Department and the Big Wheel Operator. The next analyses will be conducted in the Gearbox Area.

TABE testing began during the later part of July and will continue as the Job Analyses are completed for new departments. Individual TABE test review sessions are being held a week to ten days following the testing.

Classes will begin this week for departments which were tested earlier this summer. These classes will continue on a regular basis throughout the remainder of the grant period.

Rumor of the Week:	The test scores of individual employees have been shared with their supervisors and other Valmont management.
Response:	All test scores are kept completely confidential. The scores are given to employees on an individual basis. If the scores were shared, they came from the employee.

VALMONT 2000 WEEKLY UPDATE

What is the purpose of Valmont 2000?

New technologies, changing management styles, and a shrinking labor force are combining to create a workforce crisis in our country. Daily, employers lose money because their employees cannot read, write, compute or communicate well enough to perform their jobs safely and efficiently. The U.S. Department of Education now estimates that 25 million adults -- one in seven -- are functional illiterates who are unable to use the traditional 3 R's, or to solve problems at a level that enables them to cope with the simplest of tasks. An estimated 45 million adults holding jobs in today's workplace are either functional or marginal illiterates. This workplace literacy problem is severely restricting American companies' ability to become high performance workplaces.

Valmont Industries, in the process of transforming its organization to a high performance workplace. Here worker teams must learn to problem solve and apply basic skills in the use of quality control processes. Retooling the workers with the literacy and other basic skills requirements necessary to meet the demands of changing technologies and management system has become a major priority for human resource development at Valmont.

The Project, which is designed to serve 350 Valmont shop floor employees, is proposed as a model to be replicated at all Valmont National and international locations.

Rumor of the Week: The Valmont 2000 training is voluntary.

Reply: The Valmont 2000 training is mandatory if your test scores reveal that you need some brush-up in math, reading or writing and your job requires it. Keep in mind, however that training is on company time at Valmont (Bldg. 519 upstairs), and during your shift.

KEEP THOSE QUESTIONS COMING! THANKS

VALMONT 2000 WEEKLY UPDATE

Dave Poppe asked this question last week - **"Please remind us all what TABE testing is/means."** This was such a good question (kudos to Dave!) that I thought we should make this information available to everyone in the Valmont 2000 Update this week.

The TABE test is a test of Adult Basic Skills. It was designed to help us assess the strength of our basic reading, writing and math skills. It is not a test of our intelligence. As such, it does not tell us how smart we are. The test consists of seven parts.

Part 1: Vocabulary. How well we understand the meaning of words and word parts.

Part 2: Comprehension. How well we understand what we read.

Part 3: Mathematics computation. How well we add, subtract, multiply, and divide.

Part 4: Mathematics concepts and applications. How well we can perform mathematics problems.

Part 5: Language mechanics. How well we can use capital letters and punctuation marks.

Part 6: Language expression. How well we understand the skills in written expression.

Part 7: Spelling. How well we can find the word that is spelled correctly and best complete sentences.

As you can see this is not a job specific test and thus cannot be used legally for job selection.

VALMONT 2000 WEEKLY UPDATE

Dave Poppe recently requested: **"Please remind us all what TABE testing is."** This seems so relevant that we thought this information should be made available to everyone in the Valmont 2000 Update this week.

The TABE test is a test of Adult Basic Skills used across the nation to assess basic reading, writing and math skills. It is not a test of intelligence to tell an individual how smart he/she is. The test consists of seven parts.

Part 1: Vocabulary. How well an individual understands the meaning of words and word parts.

Part 2: Comprehension. How well an individual understands what he/she reads.

Part 3: Mathematics computation. How well an individual adds, subtracts, multiplies, and divides.

Part 4: Mathematics concepts and applications. How well an individual performs mathematics problems.

Part 5: Language mechanics. How well an individual uses capital letters and punctuation marks.

Part 6: Language expression. How well and individual understands the skills in written expression.

Part 7: Spelling. How well an individual finds the word that is spelled correctly and best complete sentences.

QUESTION OF THE WEEK: The TABE test is being used to tell how well a person can perform his/her job and is being used for job selection.

REPLY: The TABE test is **not** being used to test the performance of employees on their jobs. The questions on the TABE are not job-specific.

The TABE test scores are not being used to select people for positions. These scores are not available to supervisors and are kept in strict confidence by Metropolitan Community College.

VALMONT 2000 WEEKLY UPDATE

Many employees have asked about the classes offered within the Valmont 2000 program. The focus of this update is to discuss those classes. Generally, the Valmont 2000 classes involve the areas of reading, writing, and math. Specifically, the goal of the class is to instruct employees in using a problem-solving approach to solving workplace problems in reading, writing and math. The following are course descriptions of the three classes.

WRITING IN THE WORKPLACE -	Writing on-the-job using a problem solving strategy. An Interactive Video System is used in conjunction with commercial and site specific materials. Specific areas covered include the use of problem solving approach to communicate through formal and informal messages.
READING IN THE WORKPLACE -	Reading on-the-job using a problem-solving strategy. Specific areas include reading to find information, follow directions, check information, and draw conclusions from a variety of reading materials.
MATH IN THE WORKPLACE -	Math-in-the workplace using a problem solving strategy. Specific areas include finding amounts, expressing relationships, verifying numbers and analyzing and interpreting information.

Please realize that we are in the process of developing the course content. During the design of the courses, the Valmont 2000 instructors will be asking class participants to identify specific workplace problems that relate to their respective departments. Our goal is to provide the most relevant training program possible.

We appreciate any questions or comments you may have regarding the Valmont 2000 classes.

Valmont 2000 Weekly Update

The Valmont 2000 Task Force acknowledges that with the types of classes offered, it is sometimes difficult to see how the classroom work relates to the employee's specific job. Basic skills training is part of a bigger piece of the training puzzle. The training offers employees an opportunity to learn enhanced problem-solving skills and brush up on the basic skills in order to prepare for more advanced types of training in the future (i.e., JIT, computer, stationary engineering, etc.). If you are not used to writing proposals, reading training manuals, or participating in brain-storming sessions to resolve problems, a brush-up on the basic skills will increase both your ability to make contributions as well as increase your confidence when facing these new work situations. The Valmont 2000 Training Program is the first step in continuing your professional development.

84 employees are currently involved in training in either reading, writing or math. These classes will end on January 7, 1994. Beginning January 10, 1994, Valmont 2000 will be offering 16 classes.

283 employees have completed TABE testing and have had counseling sessions.
10 job analysis have been completed in Phase II. 23 job analysis were completed in Phase 1. 11 job analysis are currently in process.

APPENDIX E2

FREMONT 2000

GOAL 5

January 1 to December 31, 1993

CASAS Summary

16 - 22 Age	24 Total
23 - 30 Age	33 Total
31 - 40 Age	26 Total
41 - 50 Age	7 Total
51 - 60 Age	8 Total
60+ Age	1 Total
	99 Total

16 - 22 YEAR-OLD APPLICANTS

AGE	SEX	SCALED SCORE CASAS READING/MATH	ATTAINED GRADE LEVEL	EDUCATION LEVEL	ETHNIC
20	F	242/247	12	HS Diploma	C
18	F	250/239	12	HS Diploma	C
22	M	242/225	10	None-Dropout	C
21	F	242/247	12	HS Diploma	C
19	F	224/231	12	HS Diploma	C
22	F	250/247	13	HS Diploma	C
22	M	257/248	12	GED	C
20	M	251/225	12	HS Diploma	C
22	M	250/234	12	GED	C
18	F	251/247	12	HS Diploma	C
19	F	251/239	11	None-Dropout	C
22	F	242/247	14	HS Diploma	C
16	F	237/247	9	None-Dropout	C
20	M	237/220	10	None-Dropout	C
18	F	224/212	9	None-Dropout	C
18	F	242/239	11	Student	C
18	F	251/248	11	Student	C
19	F	224/208	11	None-Dropout	C
16	M	237/247	9	Student	C
20	F	250/231	12	GED	C
22	F	251/248	12	HS Diploma	C
19	F	242/227	10	None-Dropout	C
21	F	250/239	10	None-Dropout	C
17	F	226/225	10	None-Dropout	C

23 - 30 YEAR-OLD APPLICANTS

AGE	SEX	CASAS READING/MATH	GRADE LEVEL	EDUCATION LEVEL	ETHNIC
28	F	250/247	12	HS Diploma	C
28	F	250/247	12	HS Diploma	C
27	F	242/247	12	GED	C
28	F	242/234	9	GED	C
29	F	239/247	12	GED	C
27	F	237/239	12	GED	C
29	M	229/231	12	GED	C
28	F	251/248	13	HS Diploma	C
29	F	251/248	13	HS Diploma	C
23	M	242/234	12	HS Diploma	C
29	F	250/239	12	GED	C
30	F	250/239	12	HS Diploma	C
30	F	251/248	13	HS Diploma	C
26	M	250/239	12	GED	C
23	M	229/239	12	HS Diploma	C
27	F	251/248	12	HS Diploma	C
30	F	251/239	12	HS Diploma	C
25	F	242/234	12	GED	C
27	F	250/227	12	GED	C
24	M	237/239	12	GED	C
25	F	251/248	12	HS Diploma	C
26	M	237/247	12	GED	C
24	M	250/247	12	HS Diploma	C
27	F	250/248	12	GED	C
25	F	250/248	12	GED	C
23	F	218/227	12	GED	C
30	F	237/215	12	GED	C
28	F	250/248	12	GED	C
25	M	251/248	14	HS Diploma	C
27	F	216/208	12	HS Diploma	C
25	M	251/239	12	GED	C
25	F	250/231	12	HS Diploma	C
30	F	250/247	14	A.A.	C

31 - 40 YEAR-OLD APPLICANTS

AGE	SEX	CASAS READING/MATH	GRADE LEVEL	EDUCATION LEVEL	ETHNIC
33	F	242/248	12	HS Diploma	C
36	F	242/234	12	HS Diploma	C
34	F	241/248	12	HS Diploma	C
40	F	251/247	12	HS Diploma	C
40	F	250/248	13	HS Diploma	C
31	M	250/248	12	HS Diploma	C
37	F	250/247	9	GED	C
35	M	250/248	12	GED	C
33	M	251/247	13	HS Diploma	C
31	F	251/248	12	HS Diploma	C
33	M	251/247	12	HS Diploma	C
36	F	242/248	13	HS Diploma	C
39	F	229/234	12	HS Diploma	C
32	M	251/248	10	GED	C
34	F	250/234	12	HS Diploma	C
34	F	251/248	12	GED	C
35	F	250/248	11	None-Dropout	Amer. Ind.
35	F	242/225	12	HS Diploma	C
32	F	231/224	12	GED	C
33	F	251/247	15	GED	C
38	F	224/210	12	HS Diploma	C
38	M	242/231	12	HS Diploma	C
33	F	251/248	12	HS Diploma	C
39	F	242/247	12	HS Diploma	C
36	F	242/239	12	GED	Amer. Ind.
36	M	250/239	12	GED	C

41 - 50 YEAR-OLD APPLICANTS

AGE	SEX	CASAS READING/MATH	GRADE LEVEL	EDUCATION LEVEL	ETHNIC
44	F	250/247	12	HS Diploma	C
49	F	237/239	13	HS Diploma	C
41	F	250/248	14	HS Diploma	C
46	M	233/239	12	HS Diploma	C
44	F	250/222	12	HS Diploma	C
45	F	250/239	12	HS Diploma	C
41	M	251/248	12	HS Diploma	C

51 - 60 YEAR-OLD APPLICANTS

AGE	SEX	CASAS READING/MATH	GRADE LEVEL	EDUCATION LEVEL	ETHNIC
54	M	237/239	12	GED	C
58	F	251/231	12	HS Diploma	C
51	F	250/239	12	HS Diploma	C
53	F	242/248	13	HS Diploma	C
52	F	242/231	12	HS Diploma	C
51	M	218/222	12	GED	C
57	M	237/239	10	None-Dropout	C
58	F	251/248	12	HS Diploma	C

60+ APPLICANTS

AGE	SEX	CASAS READING/MATH	GRADE LEVEL	EDUCATIONLEVEL	ETHNIC
64	F	237/234	12	HS Diploma	C

Table 1
Reading Mean Scaled Scores by Education Level Completed from JTPA Programs

Years of Education Completed	Aggregate	21 years & younger	22 years & older	Native English Speakers	Non-Native English Speakers
6	215	218	213	218	210
7	222	222	220	222	219
8	224	225	224	225	222
9	227	227	228	228	222
10	230	230	230	231	225
11	231	231	231	232	226
12	234	235	234	235	228
13	238	239	238	238	230
N	62,338	25,858	35,773	53,644	8,694

Table 2
Math Mean Scaled Scores by Education Level Completed from JTPA Programs

Years of Education Completed	Aggregate	21 years & younger	22 years & older	Native English Speakers	Non-Native English Speakers
6	210	212	208	210	209
7	215	216	211	215	214
8	218	219	216	218	218
9	221	222	219	221	219
10	223	225	222	224	223
11	224	226	222	224	222
12	228	230	228	228	224
13	234	236	233	234	230
N	56,765	23,758	32,407	49,606	7,159

Data presented in column 3 display mean test score results for students who were 21 years of age and under when they took the ECS Appraisal. Data presented in column 4 display mean test score results for students who were 22 years or older. Column 5 reports reading and math scores by education level completed for native and column 6 reports reading and math scores by education level completed for non-native speakers of English.

• Introduction

This manual provides information concerning the administration of the **Employability Competency System (ECS) Appraisal Test.** The two tests included are designed to provide an initial appraisal of a participant's level of skill development in the areas of basic reading comprehension and basic math computation in an employability context. The two tests were developed by the Comprehensive Adult Student Assessment System (CASAS) from the CASAS Item Bank. This bank of over 5,000 items has been under continual development and refinement since 1980. The application of Item Response Theory (IRT) to those 5,000 items assigns a reliable index of standardized difficulty to each item. The test forms developed from these items accurately measures basic skills in a functional context. It is designed to identify participants who may be in need of instruction in basic reading and/or math skills. Other types of tests may be used for pre and post testing. The ECS Appraisal Test is only one component of a complete employability competency system that links employment related competencies to assessment and instructional materials.

• Description of the Tests

The **ECS Reading Test** assesses a person's ability to apply basic reading skills in a functional context related to employability. This test measures specific competencies and contains 20 multiple-choice items. It is a timed test and must be completed within 20 minutes.

The test features the kind of reading the participant will encounter both in training and in the workplace. The reading competency areas included in this test are identified within "Reading Test Content" on page 12.

The **ECS Math Test** assesses a person's ability to perform basic math computation and also apply basic math skills in a functional context related to employability. Each of the 20 items on the test measures a specific math skill. Six items in the assessment focus on basic math computation, while the remainder assess participants in functional job and employability-related contexts. This test is also timed and must be completed within 20 minutes.

The test measures the kind of math the participant will meet in training and on the job. The math competency areas included in this test are identified within "Math Test Content" on page 12.

• Psychometric Properties

The psychometric properties of the ECS Appraisal Test forms are briefly summarized below and show the instrumentation used in the ECS Appraisal Test to be internally consistent and accurate with the psychometric model used.

Reliability Computation of Kuder-Richardson (KR)-20 indices for the ECS Reading and Math test items indicated that in the case of the ECS Reading Test, the KR-20 was .81. The corresponding figure for the ECS Math was .89.

Item-Total Correlations Point bi-seiral correlation coefficients were obtained for the ECS Reading and Math Tests. This correlation should generally fall between .40 and .60 for each of the individual test items. In the case of the ECS Reading Test, the coefficients ranged from .30 to .58, with a mean value of .48. Similar coefficients for the ECS Math Test ranged from .46 to .63 with an average P-Value of .57.

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• Reading Test Content

The following competency areas have been included in this test:

- Interpret job applications, resumes, and letters of applications.
- Identify and use sources of information about job opportunities such as job descriptions and job ads.
- Recognize standards of behavior for job interviews and select appropriate questions and responses during job interviews.
- Identify appropriate skills and education for getting jobs in various occupational areas.
- Identify appropriate behavior, attitudes and social interaction for keeping a job and getting a promotion.
- Interpret job responsibilities and performance reviews.

• Math Test Content

The following competency areas have been included in this test:

- Add decimal numbers.
- Subtract decimal numbers.
- Multiply decimal numbers.
- Divide whole numbers.
- Add common fractions.
- Subtract common fractions.
- Interpret and compute wages and wage information.
- Use catalogs, order forms and related information to purchase goods and services.
- Interpret information about personal and family budgets.
- Interpret appropriate standard measurement for volume and temperature.
- Calculate interest rates.
- Identify and use information about training opportunities.

APPENDIX E3

FORMING EFFECTIVE PARTNERSHIPS
AGENDA

* Definitions of what a partnership is.

* Reasons to form partnerships

* Types of partnerships

* Examples of successful partnerships

* Group exercise - partnerships in Omaha

*How to form effective partnerships

WHAT IS A PARTNERSHIP?

A contract entered into by two or more persons in which each agrees to furnish a part of the capital and labor for a business enterprise, and by which each shares in some fixed proportion in profits and losses.

A partner implies a relationship, frequently between two people, in which each has equal status and a certain independence but also implicit or formal obligations to the other or others.

- The American Heritage Dictionary

Why Form Partnerships?

1. To meet the demands of increasing workloads
2. In order to cut, reduce or control costs
3. Due to the growing focus on increasing quality
4. Global competition
5. In order to pool technical strengths
6. To speed production time/allow quick response to customers.
7. To meet the need for a "systems oriented" problem solving approach.- 2 heads are better than 1.
8. Life cycles of products are shorter allowing shorter time for production.
9. Faster-evolving markets.
10. For small businesses, finding outside resources may be more economically feasible than trying to build them internally.
11. To save time and money.

Types of Partnerships

* Consumers

* Customers

* Suppliers

* Communities

* Shareholders

* Board of Directors

* Associates

* Internal Departments

* Education/Business

EXAMPLES OF SUCCESSFUL PARTNERSHIPS

EXAMPLE 1

DESCRIPTION:
In 1988, General Motors (GM) and Volvo formed a new company. Volvo GM Heavy Truck Corporation to develop class 8 trucks. Volvo owns 76% and GM owns 24%.

BENEFITS:
The structure provides a good financial base for product development and allows a stronger emphasis on future product development..

EXAMPLE 2

DESCRIPTION:
In 1993, Valmont Industries Inc., Metropolitan Community College, and the U.S. Department of Education formed a grant directed partnership in order to update the basic skills of the Valmont's Shop Floor employees.

BENEFITS:
Allows for a pooling of technical strengths and financial resources in order to develop a customized training program for the purpose of preparing the workforce to meet the technological requirements of the industry in the year 2000.

FORMING EFFECTIVE PARTNERSHIPS

GROUP EXERCISE

1. Give an example of a successful partnership within your organization.

2. What are the benefits of having this partnership?

HOW TO FORM EFFECTIVE PARTNERSHIPS

1. Make sure there are solid strategic reasons to form a partnership.

2. Explore a number of candidates for partners and find a trustworthy choice.

3. For external partnerships - research the industry of the potential external partner.

4. State expectations clearly (preferably in writing); agree on goals and principles.

5. Maintain a balance between the needs of both partners; make sure everyone is willing to pitch in.

6. Search for common objectives; spell out each partners role.

7. Instead of a 50-50 partnership/co-owner relationship, experts recommend a 51-49 split from the start. A 51-49 business relationship encourages mutual appreciation rather than self-protection. A truly successful partnership will have one chief operating officer who receives complete cooperation from the co-owner.

8. Set up procedures for handling disputes

9. Settle buy out terms.

10. Keep the dialog flowing, communicate, communicate, communicate - do not leave negotiating to attorneys or other outside parties.

11. Plan for the future.

APPENDIX E4

Workplace Literacy and the Role of the Industrial/Organizational Psychologist: An Evaluation of Worker Attitudes

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INTRODUCTION

Background

Based on their experience in the development of a workplace literacy program for Valmont Industries, Inc., the authors* have produced a model for workplace literacy which involves several aspects for which the I/O Psychologist is uniquely trained (See Appendix A). These include conducting a job analysis to allow for the development of selection tests (See Appendix B), assessing cognitive ability profiles to support aptitude testing, and developing evaluation tools which provide quantitative measures of program outcomes (See Appendices C through H). Whereas the I/O Psychologist plays a primary role in the job analysis and evaluation procedures, he/she plays a supportive role in the area of curriculum development. Thus an interdisciplinary approach involving educators, counselors, business professionals, and I/O Psychologists is required for the model to succeed.

Statement of the Problem

New technologies, changing management styles, and a shrinking labor force are combining to create a workforce crisis in our country. Daily, employers lose money because their employees cannot read, write, compute, or communicate well enough to perform their jobs safely and efficiently. The U.S. Department of Education now estimates that 25 million adults - one in seven - are functional illiterates who are unable to apply the traditional 3 R's, or to solve problems at a level that enables them to cope with the simplest of tasks. An estimated 45 million adults holding jobs in today's workplace are either functional or marginal illiterates. This workplace literacy problem is severely restraining American companies' ability to become high-performance workplaces.

Valmont Industries, a global manufacturer of steel lighting poles, center-pivot irrigation systems, and other related technologies, was in the process of transforming its organization into a high-performance workplace. Worker teams were developed to learn to solve problems and apply basic skills in the use of quality control processes. Retooling these workers with literacy and other basic skills requirements was necessary to meet the demands of changing technologies and management systems and became a major priority for human resource development at Valmont.

Valmont and Metropolitan Community College (MCC) worked closely during 1989 to begin to address the basic skills training needs of Valmont workers through a small pilot project. During 1993, their organization applied for and received a National Workplace Literacy Grant from the U.S. Department of Education, with a budget of approximately $750,000. The project was called Valmont 2000: Workplace Literacy for Lifelong Learning. Embracing the philosophy that the need to develop new skills is life-long, Valmont 2000 provides comprehensive employee assessments, individual learning plans, job task/literacy analyses, performance-based curricula, strong counseling support services, and a Valmont 2000 Learning Center, as well as mentoring and tutoring programs. The project, designed to serve 350 Valmont shop floor employees, was proposed as a model to be replicated at all Valmont national and international locations. An extensive evaluation plan developed for the Project used both quantitative and qualitative measures to assess all aspects of the Valmont 2000 Program.

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*The authors are former staff members of Valmont 2000, a workplace literacy project. Dr. Durr served as the Project Director, and Dr. Peterson served as the Job Analyst.

The I/O Psychologists developed the evaluation tool discussed in this paper as one component of the overall project evaluation plan in order to provide various measures of the participants' attitudes. These measures included worker confidence in job performance and the ability to benefit from academic training; worker perception of supervisory support and co-worker support; job satisfaction; and organizational commitment. The remainder of this paper will be limited to a discussion of these research findings as an example/illustration of the type of contributions I/O Psychologists can make to a workplace literacy program.

Purpose of the Research

1. To examine whether the workers' confidence in their ability to perform their job changed significantly while participating in the program.

2. To examine whether the workers' perception of supervisory support changed significantly while participating in the program.

3. To examine whether the workers' perception of co-worker support changed significantly while participating in the program.

4. To examine whether the workers' confidence in their ability to benefit from academic training changed significantly while participating in the program.

5. To examine whether the workers' job satisfaction changed significantly while participating in the program.

6. To examine whether the workers' organizational commitment changed significantly while participating in the program.

METHOD

Subjects

Subjects were 359 shop floor employees with an average age of 37.6 years. Ninety-nine percent of the subjects were Caucasian males with an average education level of 12.4 years. Of the 359 subjects taking the achievement tests, 242 required basic skills training in reading, writing, and/or math.

Stimuli

Worker Confidence in Their Ability to Perform Their Job. Worker Confidence in their ability to perform their job was measured with a 7-point scale ranging from 1 (Strongly Disagree) to 7 (Strongly Agree) in response to four positively worded stimulus statements (e.g., I have the ability to do my job) (See Appendix C).

Worker Perception of Supervisory Support. Perceived supervisory support was measured on a 7-point scale which ranged from 1 (Strongly Disagree) to 7 (Strongly Agree) in response to two positively worded stimulus statements (e.g., The person I report to is the sort of person who would encourage me to take time from my job to receive additional training and education.) (See Appendix D).

Worker Perception of Co-Worker Support. Perceived co-worker support was measured on a 7-point scale which ranged from 1 (Strongly Disagree) to 7 (Strongly Agree) in response to two positively worded stimulus statements (e.g., Most of my co-workers are the sort of people who would encourage me to take time from my job to receive additional training and education.) (See Appendix E).

Worker Confidence in Their Ability to Benefit from Academic Training. Perceived confidence was measured on a 7-point scale which ranged from 1 (Strongly Disagree) to 7 (Strongly Agree) in response to two positively worded stimulus statements (e.g., I believe that I can benefit from additional training and education.) (see Appendix F).

Worker Job Satisfaction. Worker Job Satisfaction was measured with a four-item survey which utilized various 7-point scale formats in response to statements about how the workers felt about their job (e.g., Circle the number of the true statement which best described how you like your job.) The measure of overall job satisfaction was developed by Hoppock (1935). McNichols, Stahl, and Manley (1978) have described four studies reporting coefficient alphas ranging from .76 to .89. Validity coefficients of.75 have been reported, indicating the measure is highly correlated with several related types of measures to include vocational interest measures as well as other job satisfaction measures (Holland, 1956, and Perone, DaWaard, and Baron, 1979) (See Appendix G).

Organizational Commitment. Organizational commitment was measured on a 7-point scale which ranged from 1 (Strongly Disagree) to 7 (Strongly Agree) in response to fifteen positively worded stimulus statements (e.g., It would take a very large change in my present job to cause me to leave Valmont.) (See Appendix H).

The scale utilized was an adaptation of Porter and Smith's (1970) organizational commitment questionnaire which has yielded acceptable reliability and validity evidence. Coefficient alpha is consistently high as illustrated in a review by Mowday, Steers, and Porter (1979) -- ranging from .82 to .93 with a median of .90. The scale has also demonstrated evidence for convergent and discriminant validity across several studies. (Dubin, 1956; Hom, Katerberg, and Hulin, 1979; and Lodahl and Kejner, 1965).

Procedure

All subjects were given the opportunity to complete the surveys at three different points within the program: prior to achievement testing (upon entry into the program), after receiving achievement test results (following achievement testing), and after workplace literacy training.

RESULTS

1. **Worker Confidence in Their Ability to Perform Their Job.** It was found that workers' confidence in their ability to perform their job showed a significant decline while participating in the program.

Time of Measure	Mean	N	Significance
Entry into program	6.58	359	
Following Achievement Testing	6.46	359	$p < .05$
Following Training	6.18	242	$p < .05$

2. **Worker Perception of Supervisory Support.** It was found that workers' perception of supervisory support showed a significant decline while participating in the program.

Time of Measure	Mean	N	Significance
Entry into program	5.12	359	
Following Achievement Testing	5.19	359	$p < .05$
Following Training	4.70	242	$p < .05$

3. **Worker Perception of Co-Worker Support.** It was found that workers' perception of co-worker support showed a significant decline while participating in the program.

Time of Measure	Mean	N	Significance
Entry into program	5.12	359	
Following Achievement Testing	5.19	359	$p < .05$
Following Training	4.70	242	$p < .05$

4. **Worker Confidence in Their Ability to Benefit From Academic Training.** It was found that workers' confidence in their ability to benefit from academic training showed a significant decline while participating in the program.

Time of Measure	Mean	N	Significance
Entry into program	5.12	359	
Following Achievement Testing	5.19	359	$p < .05$
Following Training	4.70	242	$p < .05$

5. **Worker Job Satisfaction.** It was found that workers' job satisfaction showed a significant increase while participating in the program.

Time of Measure	Mean	N	Significance
Entry into program	4.84	359	
Following Achievement Testing	5.87	359	$p < .05$
Following Training	5.18	242	$p < .05$

6. **Organizational Commitment.** It was found that Workers' organizational commitment showed a significant decline while participating in the program.

Time of Measure	Mean	N	Significance
Entry into program	5.21	359	
Following Achievement Testing	5.28	359	$p < .05$
Following Training	4.92	242	$p < .05$

DISCUSSION

Summary and Conclusions

1. Workers' confidence in their ability to perform their jobs declined significantly, as did their beliefs in their supervisors' and co-workers' willingness to provide support. However, the mean rating on each of these scales never declined below the middle of the rating scale, which was anchored as neither agree nor disagree. Therefore, although the workers' attitudes were less positive in each of these cases, they were still above the neutral point on the rating scale and in a positive direction of agreement.

2. While differences in workers' attitudes declined significantly in all measures except job satisfaction, they were not of sufficient magnitude to be of great concern. The large N size provided a great deal of statistical power.

3. Worker job satisfaction increased significantly while participating in the program.

4. The response scale format for most of the items, with the exception of the job satisfaction measure, was a Likert scale ranging from 1 (Strongly Disagree) to 7 (Strongly Agree). In the job satisfaction measure, the response scales were in a sentence format. That the only significant positive attitudinal increase was found with this measure leads one to question whether the results may have been affected by some response format artifact.

5. It is reasonable to conclude that participation in a workplace literacy program can have an impact on a worker's attitudes and beliefs.

Limitations and Future Research

1. During the periods this survey was being administered, Valmont Industries, Inc. was undergoing significant organizational changes. In managerial restructuring alone there were three new presidents, three new CEOs, and two new vice presidents. The Irrigation Division was experiencing the highest production period in the company's history. Therefore, the attitudes expressed in the survey were not solely influenced by the Valmont 2000 program and are most likely reflective of the stress experienced by workers during changing times. The results are limited in that they are not directly attributable to the impact of the Valmont 2000 program.

2. Future research should explore additional evaluation measures which will contribute to the development of supporting interventions that may make participation in a workplace literacy program psychologically satisfying.

3. Additional sources of workplace literacy related information which could be useful as a foundation for generating future research ideas can be found in the section following the reference section.

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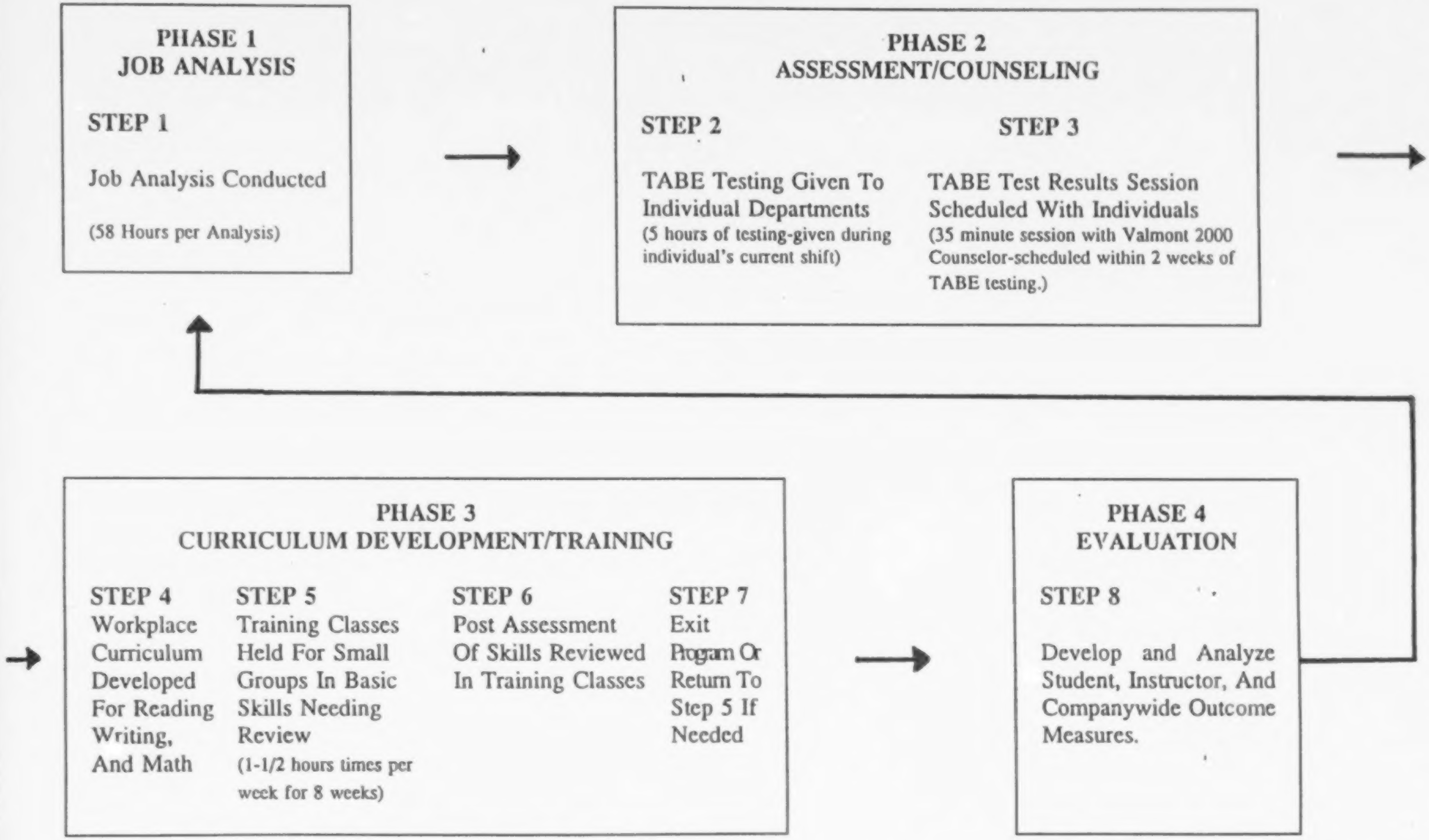
APPENDIX A

A WORKPLACE LITERACY PROGRAM MODEL



PHASE 1
JOB ANALYSIS

STEP 1

Job Analysis Conducted

(58 Hours per Analysis)

PHASE 2
ASSESSMENT/COUNSELING

STEP 2

TABE Testing Given To Individual Departments
(5 hours of testing-given during individual's current shift)

STEP 3

TABE Test Results Session Scheduled With Individuals
(35 minute session with Valmont 2000 Counselor-scheduled within 2 weeks of TABE testing.)

PHASE 3
CURRICULUM DEVELOPMENT/TRAINING

STEP 4
Workplace Curriculum Developed For Reading Writing, And Math

STEP 5
Training Classes Held For Small Groups In Basic Skills Needing Review
(1-1/2 hours times per week for 8 weeks)

STEP 6
Post Assessment Of Skills Reviewed In Training Classes

STEP 7
Exit Program Or Return To Step 5 If Needed

PHASE 4
EVALUATION

STEP 8

Develop and Analyze Student, Instructor, And Companywide Outcome Measures.

APPENDIX B

PHASE 1: Job Analysis

Job Analysis Flow Chart

Step 1
Preliminary Administrative Work
- Develop Job Analysis Team.
- Overview Job Analysis Procedure.
- Establish Schedules.

→

Step 2
Job Site Visits
- One visit per Shift.
- Observe Work Being Performed
- Video tape
- Collect work sample reading, writing and math items.

→

Step 3
Interviews
- Interviews will be in a structured format utilizing a modified version of the PAQ.
- To determine Job Tasks.
- Interview In Pairs.
- Administer Fleishman and Wonderlic

→

Step 4
Prepare Preliminary Job Analysis Inventory
- Job Tasks.
- Reading, Writing, & Math Tasks.
- Other cognitive abilities.

Step 5
Task Match & Reconciliation
- Compare Preliminary Job Analysis Inventory with Job Description, Job Procedure Information and DOT Job descriptions.
- Discrepancies to be reconciled by the Job Analysis Team

→

Step 6
Conduct Skill Assessment
- Assess reading grade equivalencies and writing level.

→

Step 7
Integration
- Add reading grade equivalencies and writing levels to job analysis preliminary report.

→

Step 8
Rating Procedure
- Independent ratings furnished by Job Analysis Team members.
- Yes-No determination of reading, writing and math tasks.
- Link reading, writing and math tasks to job tasks.

Step 9
Prepare Final Report
- Calculate mean ratings.
- Prepare report title page.
- Describe data collection procedures.

→

Step 10
Skill Assessment Team
- Overview job tasks and review video tape of job.
- Review and approve reading, writing and math skills.

→

Step 11
Approval of Final Report
- Job Analysis Team Members.
- HR Representative.

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APPENDIX C

WORKER CONFIDENCE IN THEIR ABILITY TO PERFORM THEIR JOB

Please use the scales below to indicate the extent to which you agree or disagree with the following statements. Circle the number that corresponds to your response.

1. I have the ability to do my job:

1	2	3	4	5	6	7
Strongly Disagree			Neither Agree nor Disagree			Strongly Agree

2. I expect to perform well on my job.

1	2	3	4	5	6	7
Strongly Disagree			Neither Agree nor Disagree			Strongly Agree

3. Given my personal qualities and background, I am confident that I can perform my job successfully.

1	2	3	4	5	6	7
Strongly Disagree			Neither Agree nor Disagree			Strongly Agree

4. Given my past experience and accomplishments, I am confident that I can perform my job successfully.

1	2	3	4	5	6	7
Strongly Disagree			Neither Agree nor Disagree			Strongly Agree

APPENDIX D

WORKER PERCEPTION OF SUPERVISORY SUPPORT

Please use the scales below to indicate the extent to which you agree or disagree with the following statements. Circle the number that corresponds to your response.

1. The person I report to is the sort of person who would encourage me to take time from my job to receive additional training and education.

1	2	3	4	5	6	7
Strongly Disagree			Neither Agree nor Disagree			Strongly Agree

2. The person I report to is the sort of person who would do everything possible to give me the time from my job to receive additional learning and education.

1	2	3	4	5	6	7
Strongly Disagree			Neither Agree nor Disagree			Strongly Agree

APPENDIX E

WORKER PERCEPTION OF CO-WORKER SUPPORT

Please use the scales below to indicate the extent to which you agree or disagree with the following statements. Circle the number that corresponds to your response.

1. Most of my co-workers are the sort of people who would encourage me to take time from my job to receive additional training and education.

1	2	3	4	5	6	7
Strongly Disagree			Neither Agree nor Disagree			Strongly Agree

2. Most of my co-workers are the sort of people who would do everything possible to give me time from my job to receive additional training and education.

1	2	3	4	5	6	7
Strongly Disagree			Neither Agree nor Disagree			Strongly Agree

APPENDIX F

WORKER CONFIDENCE IN THIER ABILITY TO BENEFIT FROM ACADEMIC TRAINING

Please use the scales below to indicate the extent to which you agree or disagree with the following statements. Circle the number that corresponds to your response.

1. I believe that I can benefit from additional training and education.

1	2	3	4	5	6	7
Strongly Disagree			Neither Agree nor Disagree			Strongly Agree

2. I believe that I am capable of improving my math, reading, and writing skills if given additional training and education.

1	2	3	4	5	6	7
Strongly Disagree			Neither Agree nor Disagree			Strongly Agree

APPENDIX G

WORKER JOB SATISFACTION

1. Circle the number of the statement which best describes how well you like your job.

    1. I hate it.
    2. I dislike it.
    3. I don't like it.
    4. I am indifferent to it.
    5. I like it.
    6. I am enthusiastic about it.
    7. I love it.

2. Circle the number of the statement which best describes how much of the time you are satisfied with your job.

    1. All of the time.
    2. Most of the time.
    3. A good deal of the time.
    4. About half of the time.
    5. Occasionally.
    6. Seldom.
    7. Never.

3. Circle the number of the statement which best tells how you would feel about changing your job.

    1. I would quit this job at once if I could find anything else to do.
    2. I would take almost any other job in which I could earn as much as I am earning now.
    3. I would like to change both my job and my line of work.
    4. I would like to exchange my present job for another job in the same line of work.

5. I am not eager to change my job but I would do so if I could get a better job.
6. I cannot think of any job for which I would exchange mine.
7. I would not exchange my job for any other.

4. Circle the number of the statement which lists how you think you compare with other people.

    1. No one likes his job better than I like mine.
    2. I like my job much better than most people like theirs.
    3. I like my job better than most people like theirs.
    4. I like my job about as well as most people like theirs.
    5. I dislike my job much more than most people dislike theirs.
    6. I dislike my job much more than most people dislike theirs.
    7. No one dislikes their job more than I dislike mine.

APPENDIX H

ORGANIZATIONAL COMMITMENT

Please use the scales below to indicate the extent to which you agree or disagree with the following statement. Circle the number that corresponds to your response.

1. I am willing to put in a great deal of effort beyond that normally expected in order to help Valmont be successful.

1	2	3	4	5	6	7
Strongly Disagree			Neither Agree nor Disagree			Strongly Agree

2. I tell my friends that Valmont is a great place to work.

1	2	3	4	5	6	7
Strongly Disagree			Neither Agree nor Disagree			Strongly Agree

3. I feel a great deal of loyalty to Valmont.

1	2	3	4	5	6	7
Strongly Disagree			Neither Agree nor Disagree			Strongly Agree

4. I would accept almost any type of job assignment in order to keep working for Valmont.

1	2	3	4	5	6	7
Strongly Disagree			Neither Agree nor Disagree			Strongly Agree

5. I find that my values are very similar to Valmont's values.

1	2	3	4	5	6	7
Strongly Disagree			Neither Agree nor Disagree			Strongly Agree

6. I am proud to tell others that I am part of Valmont.

1	2	3	4	5	6	7
Strongly Disagree			Neither Agree nor Disagree			Strongly Agree

7. I would rather not work for a different company, even if the work was the same as the work I perform at Valmont.

1	2	3	4	5	6	7
Strongly Disagree			Neither Agree nor Disagree			Strongly Agree

8. Valmont really inspires my very best job performance.

1	2	3	4	5	6	7
Strongly Disagree			Neither Agree nor Disagree			Strongly Agree

9. It would take a very large change in my present job to cause me to leave Valmont.

1	2	3	4	5	6	7
Strongly Disagree			Neither Agree nor Disagree			Strongly Agree

10. I am extremely glad that I chose to work for Valmont, rather than some other company.

1	2	3	4	5	6	7
Strongly Disagree			Neither Agree nor Disagree			Strongly Agree

11. There is a lot to be gained by sticking with Valmont.

1	2	3	4	5	6	7
Strongly Disagree			Neither Agree nor Disagree			Strongly Agree

12. I find it easy to agree with Valmont's employee policies.

1	2	3	4	5	6	7
Strongly Disagree			Neither Agree nor Disagree			Strongly Agree

13. I really care about the fate of Valmont.

1	2	3	4	5	6	7
Strongly Disagree			Neither Agree nor Disagree			Strongly Agree

14. Valmont is the best company to work for.

1	2	3	4	5	6	7
Strongly Disagree			Neither Agree nor Disagree			Strongly Agree

15. Deciding to work for Valmont was the best decision I ever made.

1	2	3	4	5	6	7
Strongly Disagree			Neither Agree nor Disagree			Strongly Agree

APPENDIX E5

Workplace Literacy and the Role of the Industrial/Organizational Psychologist

Margaret L. Durr, Ph.D. and Vernon A. Peterson, Ph.D.

The authors propose a **Train Once Workplace Literacy Model**. The delivery of basic skills curricula makes little sense unless supported by an employee selection procedure that assures all new hires meet minimum educational standards and a community outreach program to increase the number of qualified applicants. Based on their experience in the development of a workplace literacy program for Valmont Industries, Inc., the authors produced the Train Once model, a six-pronged approach to workplace literacy: (a) job analysis, (b) basic skills assessment (c) curriculum development and delivery, (d) program evaluation, (e) selection test development, and (f) community outreach.

There are aspects of this model for which the I/O Psychologist is uniquely trained such as conducting a job analysis to allow for the development of selection tests, developing a pay based basic skills hierarchy, and assessing cognitive ability profiles to support aptitude testing as well as curriculum development. Whereas the I/O Psychologist plays a primary role in job analysis, needs assessment, and selection, he/she plays a supportive role in the area of curriculum development. Thus, an interdisciplinary approach is required for program success.

The authors present the socialization experiences associated with the implementation of a training program in workplace literacy. They discuss the challenges of collecting clean data. Whereas incumbents who participate in a job analysis for other purposes may overstate required job skills, they are motivated, within the context of workplace literacy, to understate the basic skill requirements of their jobs in order to avoid training.

Further, the authors suggest that workplace literacy programs provide numerous opportunities for large-N hypothesis testing and survey development. These opportunities include research in the areas of self-efficacy, job satisfaction, organizational commitment, and individual differences.

APPENDIX E6

I/O TRAINING CLASS VISIT AGENDA
September 30, 1993

ACTIVITY	TIME	RESPONSIBLE PARTY	LOCATION
Facility Tour	*11:00 a.m. - 12:00 p.m.*	Larry Watzke, SR Quality Engineer Rob King, Production Manager Pole Product	*BLDG. 501* *Parking Lot*
Refreshments	*12:00 - 12:15 p.m.*		
Welcome Historical Perspective of Valmont 2000	*12:15 - 12:45 p.m.*	Steve Narans, Manager HR Development	*BLDG 510* *AV Room*
Overview of Valmont 2000 Process	*12:45 - 1:00 p.m.*	Margaret Durr, Project Director	*BLDG. 510* *AV Room*
Curriculum Development	*1:00 - 1:20 p.m.*	Ken Jones, Full Time Instructor	*BLDG. 510* *AV Room*
Job Analysis Training in the Trenches ASTD Conclusions	*1:20 - 2:00 pm.*	Margaret Durr, Project Director Steve Narans, Manager, HR Development	*BLDG 510* *AV Room*

OVERVIEW

OF

VALMONT 2000

PROCESS

PLEASE RETURN

VALMONT 2000 PROJECT OBJECTIVES

1. To provide, through August 1994, an effective plan of management to ensure the proper and efficient management of the Valmont 2000 Program.

2. To recruit and enroll through the 18 month project period, 350 participants and to provide 100% of the participants workplace skills development activities and services to ensure attainment of literacy and other workplace basic skills essential to successful placement, continued employment, advancement in careers, and increased productivity.

3. Conduct job task/literacy analysis for 25 job titles in 12 job groups to determine needed basic skills training/needed curriculum adjustments per designated job task area in ongoing process through August 1994.

4. Design and implement, through August 1994, individualized learning plans for 100% of Valmont employees with identified deficits to bridge the gaps found between skills of employees and on-the-job requirements.

5. To develop and provide, through August 1994, performance based workplace specific skills training curriculum based upon job task analysis and cooperatively planned by Valmont employees and Valmont 2000 Project.

6. To provide, through August 1994, Valmont 2000 instructional support services and activities through the Valmont Development Center for 350 of Valmont 2000 participants.

7. Develop and implement, through August 1994, Valmont 2000 mentoring program to assist new and/or current employees requesting mentors acquire essential basic or technical skills needed to start a new job or to learn a new technique or technology on the job.

8. To provide, through August 1994 a Valmont 2000 tutorial program to assist employees with special learning needs successfully achieve literacy goals.

9. To provide, through August 1994, Valmont 2000 optional delivery systems for workplace skills development curriculum, workshops, and seminars via distance learning technology including satellite down-link nationally/ internationally, telecourse instruction, and computer assisted/ interactive video learning systems.

10. To provide, through August 1994, mechanisms for continually monitoring participants' performance and maintaining Project files, data and reports.

11. To evaluate, through August 1994, the progress of the Valmont 2000 program through the use of evaluation measures that assess the degree to which the Project objectives have met the criteria.

METROPOLITAN COMMUNITY COLLEGE
AND
VALMONT INDUSTRIES

Valmont 2000: Workplace Literacy for Lifelong Learning

ABSTRACT

New technologies, changing management styles, and a shrinking labor force are combining to create a workforce crisis in our country. Daily, employers lose money because their employees cannot read, write, compute or communicate well enough to perform their jobs safely and efficiently. The U. S. Department of Education now estimates that 25 million adults—one in seven—are functional illiterates who are unable to use the traditional 3 R's, or to solve problems at a level that enables them to cope with the simplest of tasks. An estimated 45 million adults holding jobs in today's workplace are either functional or marginal illiterates. This workplace literacy problem is severely restricting American companies' ability to become high performance workplaces.

Valmont Industries, a global manufacturer of steel lighting poles, center pivot irrigation systems, and other technologies is in the process of transforming its organization into a high performance workplace. Here worker teams must learn to problem solve and apply basic skills in the use of quality control processes. Retooling these workers with the literacy and other basic skills requirements necessary to meet the demands of changing technologies and management systems has become a major priority for human resource development at Valmont.

Valmont and Metropolitan Community College (MCC) have worked closely since 1989 to begin to address the basic skills training needs of Valmont workers. Through a small pilot effort of assessment, providing classes, and performing a job task analysis, MCC and Valmont have been able not only to identify basic skill needs at Valmont, but to develop a plan for a model workplace literacy program. As a result, MCC and Valmont are proposing Valmont 2000: Workplace Literacy for Lifelong Learning. Embracing the philosophy that the need to develop new skills will be life-long, Valmont 2000 provides comprehensive employee assessments, individual learning plans, job task/literacy analyses, performance based curricula, strong support services: career and personal counseling services, a Valmont 2000 Employee Development Center, as well as mentoring and tutoring programs. The Project, which is designed to serve 350 Valmont shop floor employees, is proposed as a model to be replicated at all Valmont national and international locations. An extensive evaluation plan developed for the Project will use both quantitative and qualitative measures to assess all aspects of the Valmont 2000 Program.

Valmont 2000
Individual Testing/Training Process

① **JOB ANALYSIS CONDUCTED**
(18 hours of data collection)

→

② **TABE TESTING GIVEN TO INDIVIDUAL DEPARTMENTS**
(5 hours of testing - given during individuals current shift)

→

③ **TABE TEST RESULTS SESSION SCHEDULED WITH INDIVIDUALS**
(35 minute session with Valmont 2000 Counselor - scheduled with 2 weeks of TABE testing*.)

→

④ **TRAINING CLASSES HELD FOR SMALL GROUPS IN BASIC SKILLS NEEDING REVIEW**
(1 hour two times per week per class)

→

⑤ **POST ASSESSMENT (TESTING) OF SKILLS REVIEWED IN TRAINING CLASSES**
(35 minute session with Valmont 2000 Counselor)

→

⑥ **EXIT PROGRAM OR RETURN TO STEP 4 IF NEEDED**

*unless other circumstances arise , e.g., vacation, medical leave, etc..

CURRICULUM DEVELOPMENT

OVERVIEW OF THE CURRICULUM

THE OVERALL GOAL OF THE TRAINING PROGRAM IS TO IMPROVE THE READING, WRITING, AND MATH SKILLS OF THE PARTICIPANTS.

THE PARADIGM BASIC SKILLS FOR WORKPLACE SUCCESS PROGRAM, ALLOWS THE ADULT LEARNER TO USE A PROBLEM SOLVING STRATEGY TO ANALYZE WORKPLACE PROBLEMS AND USE BASIC SKILLS TO SOLVE THEM. THE INSTRUCTIONAL PROGRAM UTILIZES A COMPETENCY OR PERFORMANCE-BASED APPROACH TO STRESS THE IMPORTANCE OF USING BASIC SKILLS TO SOLVE THEIR WORKPLACE PROBLEMS. IN ADDITION TO THE PARADIGM SERIES, SUPPLEMENTAL MATERIALS (VALMONT-RELATED) AND THE BEYOND WORDS INTERACTIVE VIDEO PROGRAM ARE USED WITHIN THE INSTRUCTIONAL PROGRAM.

Exhibit 25. Blueprint for Success.

STEP 1: Identify Job Changes or Problems That May Require Basic Workplace Skills Training
- -Assess the extent of the problem
- -Formalize a company-wide representative advisory committee
- -Perform a job analysis for selected jobs
- -Document employee performance deficiencies on the selected jobs
- -Identify population to be targeted for training
- -Build cooperation with unions
- -Keep good records

STEP 2: Build Management and Union Support to Develop and Implement Training Programs in Workplace Basics
- -Make the case for skills training programs in workplace basics
- -Build support for skills training programs in workplace basics

STEP 3: Present Strategy and Action Plan to Management and Unions for Approval
- -Present the strategy/action plan for training
- -Select a training program architect: in-house staff vs. external providers

STEP 4: Perform a Task Analysis of Each Selected Job or Job Family
- -Perform a task analysis
- -Determine whether to select a quick route through task analysis and which process is most appropriate
- -Review the generic elements of the task analyses processes

STEP 5: Design the Curriculum
- -Design a performance-based, functional-context instructional program
- -Design evaluation system
- -Design documentation and record-keeping system
- -Obtain final budget approval to implement program

STEP 6: Develop the Curriculum
- -Prepare the instructional format
- -Select instructional techniques
- -Select facilities site and designate equipment requirements
- -Develop evaluation and monitoring instruments

STEP 7: Implement the Program
- -Select and train the instructional staff
- -Develop a training contract—yes or no?
- -Pilot test (optional)

STEP 8: Evaluate and Monitor the Training Program
- -Evaluate the program
- -Monitor the daily training
- -Connect back to management

BEST COPY AVAILABLE

JOB ANALYSIS

TRAINING IN THE TRENCHES

OPPORTUNITIES

ASTD

CONCLUSIONS

DATA TRANSMITTAL SHEETS

PHASE I

1	Shipper B Inside Packer	2891
2	Shipper B/Stager Loader Outside	2891
3	Sub Arc Base Welder	2152
4	General Shop Help	2064
5	Welder B	1020
6	Welder C	1020
7	Forklift Operator	1020
8	Set Up Technician	1020
9	Retread Machine Operator B	1170
10	Small Diameter Mill Operator	2141
11	Small Diameter Mill Trainee B	2141
12	Cut Off Operator	2141
13	Small Diameter Mill Trainee A (No Incumbents)	2141
14	Small Diameter Mill Team Leader	2141
15	Small Diameter Mill Operator Assistant	2141
16	Galvanizing Bridge Crane Operater	1100
17	Galvanizing Acid Reclam Operator B	1100
18	Galvanizing Acid Reclam Operator A	1100
19	Galvanizing Crew Leader	1100
20	Retread Machine Operator A (No incumbents)	1170
21	Welder A (No incumbents)	1020
22	Material Handler	1100
23	Airless Spray Painter	2064
24	Metalizer Painter	2064
25	Machine Operator	1020
26	T-Pole, Mast-Arm, Pole-Line Welder B	2061,2060 ,2050

METROPOLITAN COMMUNITY COLLEGE
VALMONT 2000
DATA TRANSMITTAL SHEET

JOB TITLE: Retread Machine Operator "B" DEPT: 1170 - Tire Retread

DATE OF COMPLETION: 12-18-92 LABOR GRADE: 5

REPORTS TO (TITLE): Line Supervisor

DOT CODE: 553.685-102 SOURCE: DOT, 4th Edition

DOT JOB TITLE: Tire Molder

SPECIFIC VOCATIONAL PREPARATION (SVP): Level (1-9) 3

WORKER FUNCTION: Data (0-6) 6 Persons (0-8) 8 Things (0-7) 5

GENERAL ED. DEVELOPMENT (GED): Reasoning (1-6) 2 Math (1-6) 1 Language (1-6) 1

EDUCATIONAL REQUIREMENTS

Required Educational Degree(s): N/A

Required License(s): N/A

Required Organization Membership(s): N/A

Required Certificate(s): N/A

Required Registration(s): N/A

Is Previous Experience Required? No ____ Yes X Required Amount: Three months as a Retread Machine Operator A

Time to Proficiency (On-The-Job Training): Six months (JD) - Three months to one year or more (ER)

Required Languages (Spoken or Machine): N/A

Employee Reported Lifting: Sometimes as much as 90-100 lbs. Specify Item(s): Maxi rims, retreads, casings, high floods & top plates

NOTES: Employee reported (ER) responses concerning "Time to Proficiency" differed among respondents. Any job tasks mentioned by interviewees that were not contained in the original job description can be found in the "Site Specific Task Analysis" section as "Other Activities." If Interviewer did not assign the same rating (i.e. duration, frequency, importance or extent necessary), a range is indicated.

SITE SPECIFIC TASK ANALYSIS (MODIFICATIONS OF DOT DESCRIPTION)

Job Task	Duration	Frequency	Importance	Extent Necessary
1. Operates and adjusts the tire inspection machine, matrices, tire bagger, delugger, two vertical tire mounters, horizontal tire mounter, two overhead monorail cranes, rework dismount machine, the buffer, orbitread machine, and a rubber reclaim system spray booth. Operates equipment in a clean, safe and efficient manner. Will solve minor process and maintenance problems that occur during normal shop operations such as worn rasp heads, proper template positions, proper temperature and gauging of the buffer and orbitread machines. Reports damaged equipment to the supervisor. Works in a team effort for efficient line flow.	25-50%	6-7	4-5	1-3
2. Inspects retread tires, applying an understanding and interpretation of Retread Manufacturer's Association Standards for retreading tires as found in the Valmont Quality Assurance Instruction Manual. Keeps records of inspections.	1-25%	5-7	4-5	1-3
3. Inspects finished assemblies, applies quality standards, and keeps records of inspections.	3-25%	4-7	4-5	1-3
4. Inspects component parts such as new tires, high float tires, rims, and tubes, and most importantly used tire casings which must be "graded" as they are unloaded. Applies established quality standards to all parts.	2-10%	3-7	3-5	1-3
5. Inspects tire casings to determine acceptance or rejection and keeps records of inspections.	1-15%	4-7	3-5	1-3
6. Uses a variety of hand tools, grinders, spray gun, as well as a vernier tire scale and a tread depth gauge.	1-15%	4-7	3-5	1-2

Job Task	Duration	Frequency	Importance	Extent Necessary
7. Operates a fork-lift, if qualified, to dump scrap, and move material in a safe and efficient manner that minimizes damage to component parts, machinery in quarters, buildings, semi-tractors and trailers, ramps, and forklifts.	0-10%	6-7	4-5	1-3
8. Prepares acceptable tire casings for retreading. Buffs to remove loose rubber, and reclaims dust from tire casings. Fills voids on useable tire casing. Measures tire diameter with vernier tire scale. Inspects the contour of the casing for proper application of rubber. Sprays tire casing with CVC cement and applies proper amount of rubber for desired tire size. Delugs malformed retreads and prepares them for reprocessing.	8-55%	5-7	4-5	1-3
9. Moves the portable ramp and operates the portable and the two stationary dock ramps to unload incoming materials, component parts, rubber, tires, tubes, wheels, etc. Uses all three ramps to backload wheel separators and scrap casings on semi-trailers.	0-5%	4-5	3-5	1-3
10. Identifies component parts by part number and physical appearance to verify packing slips. Maintains accurate inventory records for incoming materials and returned goods.	0-1%	3-7	4	2
Other Activities (List):				
11. Reads bulletin board information.	1%	7	3	1
12. Performs general housekeeping duties such as outside trash pick up, station clean up, and clean up of other areas within the department.	5%	7	5	3

REQUIRED COMPETENCIES (Reference "Site Specific Task Analysis" Listings)

Job Related Activity	G.E.	Relevant Job Task(s)
1. Adds whole numbers.		1-5,8,10
2. Adds decimals.		1
3. Subtracts whole numbers.		1-5,8,10

Job Related Activity	G.E.	Relevant Job Task(s)
4. Subtracts decimals.		1
5. Multiplies decimals.		1
6. Multiplies fractions.		1
7. Divides decimals.		1
8. Uses numeration (rounding off & estimating).		1
9. Uses problem solving (reads graphs).		3,4,5,10,11
10. Uses problem solving (average & median).		1
11. Calculates measurements.		1,2,7,8
12. Makes measurements.		1,6,8
13. Uses calculator.		1-5,8,10
14. Reads MSDS (Material Safety Data Sheets).	10.7	1,2,3,4,5,7,8, 10
15. Reads bulletin board materials.	9.7	1-9
16. Reads Safety Inspection Checklists.	7.7	1-10
17. Reads forklift training course instructions.	7.8	7
18. Reads Valmont Safety Mission Statement.	8.3	1-9
19. Writes Hazard Reports (paragraphs).		1-10
20. Writes Safety Inspection Checklists (paragraphs).		1-10
21. Writes Reject Tags (words/numbers).		1-10
22. Writes Incident Report Forms (paragraphs).		1-10
23. Writes Move Tags (words/numbers).		1,3
24. Writes tool repair requests (phrases).		6

ANALYSIS OF READING

Readability Calculations:

Readability was calculated using Micro Power and Light Company computer software program, "Readability Calculations." Passages of at least 100 words were entered into the program. Proper nouns such as Valmont were "flagged" as they were typed into the computer. This enabled the program to properly tabulate without skewing the results by counting such words as "difficult" according to the "Dale List of 3000 words." Finally, the program calculated readability according to the following formulas: Dale-Chall, Holmquist, ARI, Flesch Grade Level, Kincaid, Powers, Fry, Coleman and Fog.

Grade Equivalency:

Grade equivalent represents the typical performance of students in a specified grade when tested in a given month of a school year. The numeral to the left of the decimal point indicates the school grade; the numeral to the right of the decimal point indicates one school month. A grade equivalent of 10.3, then, represents the typical performance of the national sample of 10th grade students testing in late November.

When several samples from one document were supplied, the G.E.s were determined as previously described and then averaged together to form one G.E. for that material.

Recommendations:

Based on the reading samples provided for this job title, the minimum reading level competency necessary for job performance is a 10.5. Employees within the range of 8.5-10.5 could become competent with job specific vocabulary instruction. Employees falling below 8.5 would need remediation to become competent with the reading material required of this job.

The Tests of Adult Basic Education, Forms 5 and 6 (TABE 5 and 6) are recommended instruments for assessing employees' reading skills. Two forms of the same test allow for retesting employees after training has occurred. Considering the requisite reading competency for this position, a review of the TABE options below indicates that Level D (difficult) is the most appropriate level to administer.

Level	G.E. Range
E (Easy)	2.6 - 4.9
M (Medium)	4.6 - 6.9
D (Difficult)	6.6 - 8.9
A (Advanced)	8.6 - 12.9

ANALYSIS OF WRITING

The writing samples provided suggest that the level of writing required is minimal. On the Scale of General Education Development (GED), the writing for this position would be at Level 2. The GED's level of language for this position--that is noted on this form--may be higher because of the reading and speaking that this job requires.

According to the Handbook for Analyzing Jobs, published by the U.S. Department of Labor in 1972, Level 2 writing is defined as the ability to "write compound and complex sentences, using cursive style, proper end punctuation, and employing adjectives and adverbs."

A review of the writing sample reveals that most of the writing produced for this job is expository prose--discourse designed to convey information. The extent of writing needed for any one activity did not surpass the paragraph level.

REFERENCE SCALES FOR SITE SPECIFIC TASK ANALYSIS SECTION

Frequency: How often is this activity typically performed on the job?

1 = Yearly
2 = Biannually (every 6 months)
3 = Quarterly (every 3 months)
4 = Monthly
5 = Weekly
6 = Daily
7 = Ongoing

Importance: How important is performing this activity as compared to other activities in your job?

1 = Not at all important compared to other activities.
2 = Below average in importance compared to other activities.
3 = Average in importance compared to other activities.
4 = Above average in importance compared to other activities.
5 = Significantly above average in importance compared to other activities.

Extent Necessary upon Entry to the Job: How necessary is satisfactory performance of this activity at the beginning of employment?

1 = Not necessary; activity can be learned after hiring
2 = Desirable, but not essential for hiring (places new hire at distinct disadvantage if unable to perform).
3 = Necessary; new employee must be able to perform this activity at a satisfactory level upon entry into the job (after normal orientation).

Job Analysis Flow Chart

Phase II

Phase 1

Preliminary Administrative Work

- Develop Job Analysis Team.
- Overview Job Analysis Procedure.
- Establish Schedules.

→

Phase 2

Job Site Visits

- One visit per Shift.
- Observe Work Being Performed
- Video tape

→

Phase 3

Interviews

- Interviews will be informal.
- To determine Job Tasks.
- Interview In Pairs.

→

Phase 4

Prepare Preliminary Job Analysis Inventory

- Job Tasks.
- Reading, Writing, & Math Tasks.
- Other cognitive abilities.

Phase 5

Task Match & Reconciliation

- Compare Preliminary Job Analysis Inventory with Job Description, Job Procedure Information and DOT Job descriptions.
- Discrepancies to be reconciled by the Job Analysis Team

→

Phase 6

Conduct Skill Assess ment Team Tours

- Overview job tasks and review video tape of job.
- Meet with job supervisor (who should bring reading and writing samples).
- Tour work area and observe job.
- Collect additional reading/writing samples.

→

Phase 7

Integration

- Add reading grade equivalencies and writing levels to job analysis preliminary report.

→

Phase 8

Rating Procedure

- Independent ratings furnished by Job Analysis Team members.
- Yes-No determination of reading, writing and math tasks.
- Link reading, writing and math tasks to job tasks.

Phase 9

Prepare Final Report

- Calculate mean ratings.
- Prepare report title page.
- Describe data collection procedures.

→

Phase 10

Approval of Final Report

- Job Analysis Team Members.
- Reading & Writing Skills Assessment Team members.
- HR Representative.

Job Analysis Procedure
Phase II

Phase 1:	**Preliminary Administrative Work**
	A Job Analysis Team will be developed. The team shall consist of 4 persons: a manager who is familiar with the job being analyzed, immediate supervisor, and two persons who perform the job regularly. The Job Analysis Team will be responsible for scheduling job-site visits and interviews, reviewing the job analysis product, providing job task and cognitive ability ratings, and approving the final job analysis report.
Phase 2:	**Job-Site Visits**
	The Job Analyst will conduct work-site visits to observe and video tape the job as it is performed. Typically, three site visits will be conducted: one visit lasting two hours for each shift.
Phase 3:	**Interviews**
	At the onset of each interview, incumbents will be asked to complete the Cognitive Abilities Section of the Fleishman Job Analysis Survey, and a cognitive ability measure. The Job Analyst will then interview Job Knowledge Experts who, preferably, are not members of the Job Analysis Team. Typically, the Job Analyst will interview two Job Knowledge Experts at one time. The interviews will be conducted informally to determine the job tasks performed by incumbents.
Phase 4:	**Preliminary Job Analysis Inventory**
	A preliminary job analysis inventory will be developed to include a listing of job tasks, reading, writing, and math tasks, and other cognitive abilities.
Phase 5:	**Task Match and Reconciliation**
	The Job Analyst will compare the preliminary job analysis inventory to its corresponding job description, available job procedure information, and Department of Labor DOT job descriptions. Discrepancies will be reconciled by the Job Analysis Team.
Phase 6:	**Skills Assessment Team Tours**
	The Job Analysis will provide Skills Assessment Team members a copy of the interim job analysis report, an overview of the job, and a job tour. Skills Assessment Team members will then be left at the job site to collect reading and writing samples for analysis.[1]
Phase 7:	**Integration**
	The reading grade equivalencies and writing levels, based upon the reading and writing samples, will be added to the job analysis.

Phase 8:	**Rating Procedure**
	Job Analysis Team members will independently provide job task and cognitive ability ratings of frequency and importance. Detailed attention will be given to the areas of reading, writing, and mathematics to determine the reading, writing, and math tasks performed as part of the job and their linkage to job tasks.[2]
Phase 9:	**Final Report**
	The Job Analyst will calculate a mean frequency and importance rating for each task and cognitive ability. A report title page will be developed to include report date, job tittle, work summary, an overview of the job analysis procedure, name of Job Analyst and members of the Job Analysis team, as well as a detailed description of the data collection processes (date and time of site visits, names of site contact, and interviewees).
Phase 10:	**Approval of Final Report**
	Job Analysis Team members, members of the Reading and Writing Skills Assessment Teams, and a Human Resource Representative will review and approve the Final Report.

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[1] Note. Reading grade equivalencies and writing levels based on the Scale of General Education Development (GED), as assessed by the Reading and Writing Skills Assessment Teams, will be validated by a comparison with the Cognitive Abilities Section of the Fleishman Job Analysis Survey, Dictionary of Occupational Titles (DOT) codes, math, writing, and reading skills determined by the Job Analyst, and Subject Matter Experts at Metropolitan Community College.

[2] Note. Reading grade equivalencies and writing levels based on the Scale of General Education Development (GED) will be determined by the Reading and Writing Assessment Teams at a later point in time.

Job Analysis Information[1]:

A Preliminary Report

Prepared: August 23, 1993

Job Title: Big Wheel Operator

Job Analysis Team Members: (a) Jack Boysen, (b) Dave Karel, (c) LeRoy Swanda.

Job Analyst: Vernon A. Peterson, Ph.D.

Job Analysis Information[1]

Prepared: August 23, 1993

Job Title: Big Wheel Operator

Work Summary: The workers who fill the above position are responsible for operating the Big Wheel Machine.

Job Analysis Procedure: The information contained in this report was acquired through (a) informal interviews guided by information gained through site visits, (b) written responses to the Cognitive Abilities Section of the Fleishman Job Analysis Survey[2], (c) verbal responses to a survey of required math, reading, and writing competencies prepared by Metropolitan Community College, (d) reading and writing samples, and (e) ratings provided by a job specific Job Analysis Team.

After having observed the work being performed during each of three shifts, the Job Analyst conducted several Job Analysis Interviews. At the onset of each interview, incumbents were asked to complete the Cognitive Abilities Section of the Fleishman Job Analysis Survey and a cognitive ability measure. During each interview, incumbents were questioned to determine the job tasks performed on the job. Based, in part, on the Job Analysis Interviews, a preliminary job analysis inventory was developed.

The preliminary inventory consisted of a tentative listing of job tasks, possible math, reading, and writing competencies, and other cognitive abilities. The preliminary job analysis inventory was then compared against the corresponding Valmont Industries Job Description, available job procedure information, and Department of Labor's Dictionary of Occupational Titles (DOT) job descriptions. Discrepancies, when they occurred, were reconciled by the Job Analysis Team which consisted of two members of management who were highly familiar with the job being analyzed and two job incumbents.

After completing the reconciliation procedure and making the appropriate changes, when required, Job Analysis Team members were asked to independently provided job task and cognitive ability ratings of frequency and importance. They were also asked to determine which math, reading, and writing competencies were required by the job and were asked to link each competency (e.g., read company memos) to its corresponding job task.

Based on the above, mean ratings of frequency and importance were calculated, by the Job Analyst, for each job task and cognitive ability. A report title page which summarized the job analysis and data collection procedure was prepared by the Job Analyst and was subsequently submitted to the members of the Job Analysis and Reading and Writing Skills Assessment Teams for their approval.

Job Analysis Team Members: (a) Jack Boysen, (b) Dave Karel, (c) LeRoy Swanda.

Job Analyst: Vernon A. Peterson, Ph.D.

Data Collection Information

Site Visits: July 28 and 29, 1993 (shifts one, two, and three).

Site Contacts: (a) Dave Karel (first shift), (b) Mike Daugherty (second shift), (c) Terry Hammond (third shift).

Interviewees: (a) Dave Karel, (b) Mike Daugherty, (c) Terry Hammond.

Raters: Job Analysis Team members

[1]Note. Preparation of this report was funded by a Federal Grant provided to Metropolitan Community College.

[2]Note. The Fleishman Job Analysis Survey is a standardized survey of worker characteristics developed by Dr. Fleishman and published by Consulting Psychologists Press, Inc., 3803 E. Bayshore Road, Palo Alto, CA 94303.

Approvals

Job Analysis Team Members	Date

Reading Skills Assessment Team Members	

Writing Skills Assessment Team Members	

Human Resource Representative	

RATING SCALES

Importance Scale

01 = Extremely Unimportant
02 = Very Unimportant
03 = Unimportant
04 = Somewhat Unimportant
05 = Somewhat Important
06 = Important
07 = Very Important
08 = Extremely Important

Frequency Scale

01 = Never
02 = Very Infrequently
03 = Infrequently
04 = Somewhat Infrequently
05 = Somewhat Frequently
06 = Frequently
07 = Very Frequently
08 = All of the Time

JOB TASKS

Dimension 1: Setup

01. [(I) 6.3 (F) 6.6] Determine tube lengths, base size, and gauge.
02. [(I) 6.6 (F) 5.6] Set height of push cart.
03. [(I) 6.3 (F) 5.0] Select and activate kick in cylinders.
04. [(I) 7.0 (F) 5.3] Set limit switch to establish length of push cart travel path.
05. [(I) 6.3 (F) 5.0] Select and activate tube entry lift cylinder.
06. [(I) 6.6 (F) 6.0] Set height of end lift.
07. [(I) 7.3 (F) 5.6] Set height of under lift.
08. [(I) 6.3 (F) 5.3] Select and install cone.
09. [(I) 6.6 (F) 5.6] Set length of pull cart.
10. [(I) 6.0 (F) 4.3] Install (change die as required).
11. [(I) 7.0 (F) 4.0] Change slitter shoes.
12. [(I) 7.3 (F) 5.6] Check contacts.
13. [(I) 5.6 (F) 4.0] Install scarf bar.
14. [(I) 7.0 (F) 5.0] Set wheel speed.
15. [(I) 7.6 (F) 5.0] Set computer.
16. [(I) 7.6 (F) 5.6] Set wheel pressure.
17. [(I) 7.0 (F) 6.0] Set booster kick in (Primary and Secondary).
18. [(I) 7.0 (F) 5.3] Set bleed.
19. [(I) 7.3 (F) 5.6] Select start point of die.
20. [(I) 7.3 (F) 5.6] Set magnetic stop on die.
21. [(I) 7.3 (F) 5.6] Set wheel Cycle.
22. [(I) 7.6 (F) 5.0] Adjust height of press wheel.
23. [(I) 6.0 (F) 4.3] Adjust water flow.

Dimension 2: Operation

24. [(I) 6.3 (F) 6.3] Convey tube down crossover rack and stop.

25. [(I) 6.3 (F) 6.3] Tip tube into entry rack.

26. [(I) 7.0 (F) 7.3] Raise entry lift to align tube with push cart.

27. [(I) 6.6 (F) 7.0] Support tube with end lift.

28. [(I) 7.6 (F) 7.3] Lower entry lift to clear out of the way for the push cart.

29. [(I) 6.6 (F) 7.3] Advance tube with push cart towards wheel.

30. [(I) 7.3 (F) 7.0] Raise under push to align with wheel.

31. [(I) 7.0 (F) 6.6] Set chamber of tube for entry into big wheel.

32. [(I) 7.0 (F) 6.6] Inset tube with push cart into wheel.

33. [(I) 7.6 (F) 7.6] Open wheel and jog tube into weld zone.

34. [(I) 7.6 (F) 7.6] Maintain position and shape of tube in weld zone.

35. [(I) 7.3 (F) 7.3] Lower weld head onto tube.

36. [(I) 7.6 (F) 7.6] Jog tube under press wheel.

37. [(I) 7.0 (F) 7.0] Raise pressure to preset level.

38. [(I) 7.3 (F) 7.3] Press cycle start button to begin processing tube.

39. [(I) 8.0 (F) 7.6] Monitor and adjust heat by observing color of squeeze out.

40. [(I) 7.3 (F) 8.0] Clamp pull cart onto tube.

41. [(I) 8.0 (F) 8.0] Monitor and adjust tube under center of press wheel.

42. [(I) 4.6 (F) 3.6] Press cycle stop once tube has cleared weld area.

43. [(I) 5.6 (F) 3.6] Manually arc weld base end.

44. [(I) 5.6 (F) 5.6] Run tube down and eject onto exit rack.

45. [(I) 6.0 (F) 6.6] Operate wheel control.

Dimension 3: Other Activities

46. [(I) 5.6 (F) 4.3] Attend meetings (e.g., safety, impact).

47. [(I) 7.0 (F) 4.6] Train new employees.

48. [(I) 4.5 (F) 5.5] Provide routine maintenance (e.g., replace contacts, replace press wheel, bearings and contacts).

49. [(I) 4.6 (F) 5.3] Initiate maintenance/repair requests.

50. [(I) 4.6 (F) 3.6] Reset circuit breakers.

51. [(I) 5.0 (F) 5.3] Report production and production related problems.

52. [(I) 6.3 (F) 4.3] Complete report forms (e.g., hazard/safety reports).

53. [(I) 5.6 (F) 3.3] Fill in for other workers.

54. [(I) 6.0 (F) 6.0] Pick up scarf and place in hopper.

55. [(I) 5.0 (F) 3.3] Empty scarf hopper.

56. [(I) 4.6 (F) 3.3] Operate forklift.

57. [(I) 6.0 (F) 3.0] Install/remove shims from dies or pull cart.

58. [(I) 5.0 (F) 3.0] Manually place pole on track.

59. [(I) 7.6 (F) 7.6] Inspect quality of incoming product.

60. [(I) 7.3 (F) 7.3] Inspect quality of output.

61. [(I) 6.6 (F) 6.6] Convey information to adjoining shift operators.

62. [(I) 5.3 (F) 6.0] Badge in.

63. [(I) 5.6 (F) 3.6] Remove flakes from press wheel.

64. [(I) 5.6 (F) 5.6] Operate hoist (e.g., when setting dies).

65. [(I) 6.0 (F) 6.3] Use assorted handtools.

66. [(I) 7.0 (F) 4.0] Align wheel dies.

67. [(I) 6.3 (F) 5.3] Record data in set up book (e.g. under push settings).

68. [(I) 4.6 (F) 3.3] Present information (e.g., project Impact).

69. [(I) 6.0 (F) 3.3] Reinstall chain on sprocket.

70. [(I) 6.0 (F) 6.0] Read Bulletin Board.

	Math, Reading, and Writing Skills	Linkages
01.	Measures in Fractionals (1/2, 1/4, 3/32,5/64).	1, 2, 6, 8, 19, 22
02.	Adds units (2 feet, 5 inches + 1 foot, 9 inches = ?).	1
03.	Subtracts units (5 yards, 5 feet - 2 yards, 9 inches = ?).	1
04.	Uses an American unit ruler.	1, 2, 6, 7, 8
05.	Measures down to 1/16 of an inch.	2, 6
06.	Adds whole numbers.	1, 6, 7
07.	Subtracts whole numbers.	1, 6, 7
08.	Reads a bar graph.	51, 68, 70
09.	Reads production information.	51, 61, 68
10.	Reads safety related information.	46, 47, 52, 70
11.	Reads any other on-screen computer terminal information (other than E-mail).	14, 15, 17, 39, 45
12.	Reads company memos (besides E-mail).	46
13.	Reads information related to project IMPACT.	46, 51, 68
14.	Reads written materials during initial training period.	1 - 70
15.	Reads the company newsletter.	70
16	Reads direct labor cards (IBM cards).	62
17.	Reads Tube schedule cards.	1
18.	Reads labor write-off cards.	62
19.	Reads production reports.	51
20.	Reads safety related information.	12, 46
21.	Reads Safety Inspection Check lists.	46
22.	Reads instructions about proper lifting.	46
23.	Reads safety brochures.	46
24.	Reads notes "to" and "from" other shifts.	1 - 70

	Math, Reading, and Writing Skills	Linkages
25.	Reads meeting notices.	70
26.	Reads job postings.	70
27.	Reads OPOP forms.	70
28.	Reads employee bulletin board (employee items for sale, work schedules, OSHA information, upcoming company events).	1 - 70
29.	Fills out labor write-off cards (words).	62
30.	Writes accident reports (occasionally in paragraph form).	52
31.	Writes hazard reports (sentences).	52
32.	Writes notes to other shifts (sentences).	68
33.	Writes for safety-related matters (sentences).	46, 52
34.	Writes related to project Impact (paragraphs).	1 - 70

COGNITIVE ABILITIES

01. [(I) 6.3 (F) 6.0] Oral Comprehension (FR 4.0)[3]: The ability to listen and understand spoken words and sentences.

02. [(I) 5.3 (F) 4.6] Written Comprehension (FR 4.0): The ability to read and understand written sentences and paragraphs.

03. [(I) 5.6 (F) 5.0] Oral Expression (FR 4.8): The ability to use words and sentences in speaking so others will understand.

04. [(I) 4.3 (F) 3.3] Written Expression (FR 3.4): The ability to use words and sentences in writing so others will understand. It includes the ability to communicate information and ideas in writing. This ability involves knowledge of the meanings and distinctions among words, knowledge of grammar, and the ability to organize sentences and paragraphs.

05. [(I) 5.0 (F) 4.3] Fluency of Ideas (FR 3.4): The ability to come up with a number of ideas about a given topic. It concerns the number of ideas produced rather than the quality, correctness, or creativity of the ideas.

06. [(I) 5.0 (F) 4.3] Originality (FR 4.2): The ability to come up with unusual or clever ideas about a given topic or situation. Is the ability to produce creative solutions to problems or to develop new ways to solve a problem when the standard ways don't apply.

07. [(I) 5.6 (F) 5.0] Memorization (FR 4.8): The ability to remember information such as words, numbers, pictures and procedures. Pieces of information can be remembered by themselves or with other pieces of information.

08. [(I) 6.0 (F) 5.6] Problem Sensitivity (FR 5.8): The ability to tell when something is wrong or is likely to go wrong. It includes being able to identify the whole problem as well as the various parts of the problem.

09. [(I) 4.3 (F) 3.3] Mathematical Reasoning (FR 3.4): The ability to understand and organize a problem and then to select a mathematical method or formula to solve the problem. It encompasses reasoning through mathematical problems in order to determine appropriate operations which can be performed to solve problems. It also includes the understanding or structuring of mathematical problems. The actual manipulation of numbers is not included in this ability.

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[3] FR stands for Fleishman Rating. It is a rating, on a 7 point scale (1= low to 7= high), of the level of the ability required by the job. Fleishman Ratings are mean ratings supplied by members of the job analysis team and incumbents.

10. [(I) 3.0 (F) 3.3] Number Facility (FR 4.0): This ability involves the degree to which adding, subtracting, multiplying, or dividing can be done quickly or correctly. These procedures can be steps in other operations like finding percents and taking square roots.

11. [(I) 5.6 (F) 5.3] Deductive Reasoning (FR 4.2): The ability to apply general rules to specific problems to come up with logical answers. It involves deciding if an answer makes sense.

12. [(I) 5.3 (F) 4.0] Inductive Reasoning (FR 4.2): The ability to combine separate pieces of information, or specific answers to problems, to form general rules or conclusions. This involves the ability to think of possible reasons why things go together. It also includes coming up with a logical explanation for a series of events that seem unrelated.

13. [(I) 5.0 (F) 3.6] Information Ordering (FR 4.0): The ability to correctly follow a rule or set of rules in order to arrange things or actions in a certain order. The rule or set of rules to be used must already be given. The things or actions to be put in order can include numbers, letters, words, pictures, procedures, sentences, and mathematical or logical operations.

14. [(I) 3.6 (F) 3.0] Category Flexibility (FR 4.0): The ability to produce many rules so that each rule tells how to group a set of things in a different way. Each different group must contain at least two things from the original set of things.

15. [(I) 4.3 (F) 3.3] Speed of Closure (FR 4.0): The ability to quickly make sense of information that at first seems to be without meaning or organization. It involves the degree to which different pieces of information can be combined and organized into one meaningful pattern quickly. The material may be visual or auditory.

16. [(I) 4.3 (F) 3.6] Flexibility of Closure (FR 4.4): The ability to identify or detect a known pattern (a figure, word, or object) that is hidden in other material. The task is to pick out the pattern you are looking for from the background material.

17. [(I) 5.3 (F) 4.3] Spatial Orientation (FR 5.0): The ability to tell where you are in relation to the location of some object, or to tell where the object is in relation to you. This ability allows you to keep oriented in a vehicle as it changes location and direction. It helps keep you from getting disoriented or lost as you move about in a new environment.

18. [(I) 4.3 (F) 4.0]	Visualization (FR 4.2): The ability to imagine how something will look when it is moved around or when its parts are moved or rearranged. It requires the forming of mental images of what patterns or objects would look like *after certain changes*, such as unfolding or rotation. You have to predict what an object, set of objects, or pattern would look like after the changes were carried out.
19. [(I) 4.0 (F) 3.3]	Perceptual Speed (FR 4.2): This ability involves the degree to which one can compare letters, numbers, objects, pictures, or patterns, both quickly and accurately. The things to be compared may be presented at the same time or one after the other. This ability also includes comparing a presented object with a remembered object.
20. [(I) 6.6 (F) 5.6]	Selective Attention (FR 5.0): The ability to concentrate on a task without getting distracted. When distraction is present, it is not part of the task being done. This ability also involves concentrating while performing a boring task.
21. [(I) 4.3 (F) 4.0]	Time Sharing (FR 4.6): The ability to shift back and forth between two or more sources of information. The information can be in the form or speech, signals, sounds, touch, or other sources.

ANALYSIS OF READING

Readability Calculations: Readability was calculated using the RIGHTWRITER which uses the Flesh-Kincaid formula to calculate the Readability Index. This formula is the United States Government Department of Defense Standard. The Readability Index is based on the average sentence length and the average number of syllables per word. The Jargon Index measures the use of jargon. Jargon is a vocabulary known only by insiders in a profession or business.

Grade Equivalency: Grade equivalency represents the typical performance of students in a specified grade when tested in a given month of a school year. The numeral to the left of the decimal point indicates the school grade; the numeral to the right of the decimal point indicates the school month. A grade equivalency of 10.3, represents the typical performance of 10th grade students in November.

Recommendations: Based on the reading samples provided, company wide and job specific, the recommended reading level competency is 10.0. Employees within the range of 9.0 - 10.0 could become competent with job specific vocabulary instruction. Employees falling below 9.0 would need remediation to become competent.

Reading Sample	G.E.
1. Job Postings (e.g. Lead Quality Assurance Technician).	12.53
2. Production Information (e.g., minutes of shop/management Committee meetings).	11.57
3. Safety Related Information (e.g. Hazard and Incident Reports.	6.51
4. Safety Gram.	9.48
5. Ergonomics News.	8.41
6. Company memos (besides E-mail) (e.g., news release 8/93).	12.07
7. Project Impact Information (e.g., Impact Plus Quarterly Update).	12.00
8. Training Materials.[3]	
9. Product Labels.[2]	
10. Newsletter/Announcements.	12.07
11. Direct Labor Cards.[2]	
12. Tube Schedule Cards.[2]	
13. Labor Write-off cards.[1]	
14. Production Reports.[1]	
15. Safety Inspection Check-list.[2]	
16. Product Warning Labels.[2]	
17. Instruction re: Proper Lifting.[2]	
18. Safety Brochure.	7.81
19. Notes to-from other shifts.[3]	
20. Business Update (Quarterly Report).	12.20
21. OSHA Postings.	10.91

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[1] The document consists primarily of numbers. As such, it could not be subjected to the Reading Level Analysis.

[2] The document did not meet the 100 word minimum to permit a Reading Level Analysis.

[3] Not available at time of analysis.

ANALYSIS OF WRITING

The Writing samples provided suggest that the level of Writing required is minimal. A review of the Writing samples reveals that most of the Writing produced for this job is expository prose -- discourse designed to convey information. The extent of Writing needed for any one activity did not surpass the paragraph level.

Writing Sample

1. Incident Reports.
2. Hazard Reports.
3. E-Mail Messages.
4. Move Tags.
5. Informal messages to coworkers/supervisors.

VALMONT 2000 UPDATE

You may have heard about Valmont 2000 and our partnership with Metropolitan Community College. The following information is being provided in order to keep you up-to-date on what's happening with this project.

Job Analyses are being completed for the Slitter Department and the Big Wheel Operator. The next analyses will be conducted in the Gearbox Area.

TABE testing began during the later part of July and will continue as the Job Analyses are completed for new departments. Individual TABE test review sessions are being held a week to ten days following the testing.

Classes will begin this week for departments which were tested earlier this summer. These classes will continue on a regular basis throughout the remainder of the grant period.

Rumor of the Week:	The test scores of individual employees have been shared with their supervisors and other Valmont management.
Response:	All test scores are kept completely confidential. The scores are given to employees on an individual basis. If the scores were shared, they came from the employee.

VALMONT 2000 WEEKLY UPDATE

What is the purpose of Valmont 2000?

New technologies, changing management styles, and a shrinking labor force are combining to create a workforce crisis in our country. Daily, employers lose money because their employees cannot read, write, compute or communicate well enough to perform their jobs safely and efficiently. The U.S. Department of Education now estimates that 25 million adults -- one in seven -- are functional illiterates who are unable to use the traditional 3 R's, or to solve problems at a level that enables them to cope with the simplest of tasks. An estimated 45 million adults holding jobs in today's workplace are either functional or marginal illiterates. This workplace literacy problem is severely restricting American companies' ability to become high performance workplaces.

Valmont Industries, in the process of transforming its organization to a high performance workplace. Here worker teams must learn to problem solve and apply basic skills in the use of quality control processes. Retooling the workers with the literacy and other basic skills requirements necessary to meet the demands of changing technologies and management system has become a major priority for human resource development at Valmont.

The Project, which is designed to serve 350 Valmont shop floor employees, is proposed as a model to be replicated at all Valmont National and international locations.

Rumor of the Week: The Valmont 2000 training is voluntary.

Reply: The Valmont 2000 training is mandatory if your test scores reveal that you need some brush-up in math, reading or writing and your job requires it. Keep in mind, however that training is on company time at Valmont (Bldg. 519 upstairs), and during your shift.

KEEP THOSE QUESTIONS COMING! THANKS

VALMONT 2000 WEEKLY UPDATE

Dave Poppe asked this question last week - "**Please remind us all what TABE testing is/means.**" This was such a good question (kudos to Dave!) that I thought we should make this information available to everyone in the Valmont 2000 Update this week.

The TABE test is a test of Adult Basic Skills. It was designed to help us assess the strength of our basic reading, writing and math skills. It is not a test of our intelligence. As such, it does not tell us how smart we are. The test consists of seven parts.

Part 1: Vocabulary. How well we understand the meaning of words and word parts.

Part 2: Comprehension. How well we understand what we read.

Part 3: Mathematics computation. How well we add, subtract, multiply, and divide.

Part 4: Mathematics concepts and applications. How well we can perform mathematics problems.

Part 5: Language mechanics. How well we can use capital letters and punctuation marks.

Part 6: Language expression. How well we understand the skills in written expression.

Part 7: Spelling. How well we can find the word that is spelled correctly and best complete sentences.

As you can see this is not a job specific test and thus cannot be used legally for job selection.

VALMONT 2000 WEEKLY UPDATE

Many employees have asked about the classes offered within the Valmont 2000 program. The focus of this update is to discuss those classes. Generally, the Valmont 2000 classes involve the areas of reading, writing, and math. Specifically, the goal of the class is to instruct employees in using a problem-solving approach to solving workplace problems in reading, writing and math. The following are course descriptions of the three classes.

WRITING IN THE WORKPLACE -	Writing on-the-job using a problem solving strategy. An Interactive Video System is used in conjunction with commercial and site specific materials. Specific areas covered include the use of problem solving approach to communicate through formal and informal messages.
READING IN THE WORKPLACE -	Reading on-the-job using a problem-solving strategy. Specific areas include reading to find information, follow directions, check information, and draw conclusions from a variety of reading materials.
MATH IN THE WORKPLACE -	Math-in-the workplace using a problem solving strategy. Specific areas include finding amounts, expressing relationships, verifying numbers and analyzing and interpreting information.

Please realize that we are in the process of developing the course content. During the design of the courses, the Valmont 2000 instructors will be asking class participants to identify specific workplace problems that relate to their respective departments. Our goal is to provide the most relevant training program possible.

We appreciate any questions or comments you may have regarding the Valmont 2000 classes.

MISSION STATEMENT

The purpose of the Nebraska Chapter of ASTD is:

- *to encourage and assist members to achieve the highest levels of professionalism*
- *to be recognized as leaders in workplace learning and performance*
- *to be viewed as strategic partners within the community and business, providing workplace learning development for the future*

ASTD is committed to the maximum development and utilization of human potential. In conformity with applicable law, the Society offers equal opportunity to all, regardless of race, color, creed, religion, national origin, gender, marital status, physical or mental handicap, political affiliation, age, veteran status, and other characteristics protected by law.

NEBRASKA CHAPTER
AMERICAN SOCIETY FOR TRAINING AND DEVELOPMENT
P.O. BOX 540655
OMAHA, NEBRASKA 68154

MEMBERSHIP APPLICATION

NAME ______________________________

ORGANIZATION ______________________________

WORK ADDRESS ______________________________

CITY, STATE, AND ZIP CODE ______________________________

POSITION TITLE ______________________________

WORK PHONE ______________ HOME PHONE ______________

NATURE OF BUSINESS/INDUSTRY ______________________________

What topics interest you most for monthly meetings? ______________________________

____

How many years have you been a member of ASTD? __________

Are you a member of National ASTD (Yes/No)? __________

Would you be willing to serve on any of the following committees?
(See reverse side for committee descriptions) Circle your choice

- Membership
- Training
- Marketing
- Special Interest Groups
- Programming
- Information Services
- Awards

PLEASE RETURN THIS FORM WITH MEMBERSHIP DUES OF $35 TO:

Arlene Jackson
Vice President, Membership
First Bank
222 S. 72 Street
Omaha, NE 68114
402-393-0800

- -

TO BE COMPLETED BY MEMBERSHIP COMMITTEE

CORPORATE ______ PERSONAL ______ CHECK# ________ AMOUNT ________

DATE RECEIVED ________ DATE POSTED ________

NEW MEMBER ________

OPPORTUNITIES

PLEASE RETURN

jective 7: Develop and implement through August 1994, Valmont 2000 mentoring program to assist new and/or current employees requesting mentors acquire essential basic or technical skills needed to start a new job or to learn a new technique or technology on the job.

IMPLEMENTATION STRATEGIES	PERFORMANCE EVALUATION MEASURES	RESOURCES/PERSONNEL	TIMELINE
Recruit and identify mentors from a pool of experienced employees to serve as role models and job coaches as new employees enter jobs, or as other employees are promoted or need to adjust/learn new technologies introduced into jobs.	Data show a minimum of 30 experienced employees are recruited for Valmont 2000 Mentoring program.	Project Director Valmont HRD Manager Valmont Supervisors Valmont employees	June - July 1993
Train mentors utilizing training videos, role playing and other interactive learning experiences, in training sessions held quarterly.	100% mentors complete 8 hour mentor training program.	Project Director Project staff	August, December 1993 March, June 1994
Develop and distribute mentor handbooks.	Records document each mentor receives and uses Mentor Handbook during mentoring activity.	Project Director	August 1993
Assign mentor to colleague.	Records show 90% employees who request a mentor are provided a role model mentor.	Project Director Project Counselor	August 1993 - July 1994
Evaluate mentor training.	Mentors rate mentoring training provided 8.5 or better on 1-10 scale.	Mentors External Evaluator	August 1993 - July 1994

*Revised 2/19/93

IMPLEMENTATION STRATEGIES	PERFORMANCE EVALUATION MEASURES	RESOURCES/PERSONNEL	TIMELINE
Basic Skills Courses: ▪ Reading ▪ Writing ▪ Computation ▪ Applied Basics Skills ▪ Reading Schematics ▪ Problem Solving Options: ▪ GED Preparation Classes ▪ *ESL Classes ▪ Telecourse Instruction in "Advanced Basics"			
4 Modify curriculum as appropriate to meet needs of employees with disabilities.	Data document 100% employees with disabilities are provided curricula and other required accommodations to meet identified needs.	Instructors MCC Special Needs Counselors	June 1993 - August 1994

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*Revised 2/19/93

APPENDIX E7

WORKKEYS

Score Reporting Package

The Work Keys assessments are designed to assess the skills of individuals with respect to the content of each assessment (i.e., criterion-referenced assessment). Several different types of score reports are generated as part of the standard reporting package.

✓ **Individual Score Reports:** Two copies of this multiple-page report are printed for each examinee. The first section of this report provides the examinee's skill level for each assessment administered and descriptions of the tasks associated with those skill levels. It also provides some strategies the examinee may use to improve his or her levels of skills. The second section of this report consists of one page which contains the examinee's scores and the demographic and other information provided by the examinee during assessment. This report's third section is a Work Keys Summary. Although similar to the first section, the format of this section makes it suitable for the examinee to copy and attach to job or school admission applications.

✓ **Roster Reports:** One copy of this multiple page report is provided per client order. Four to six lines (depending on the number of assessments administered) of information are printed for each examinee. The information includes the assessment score(s), demographic data, and job-related data.

✓ **Chart Essay Reports:** One copy of this multiple-page report is provided per client order. A maximum of 14 separately titled sub-reports are generated as "executive summaries" for each assessment included in the report. If the number of examinees for a particular sub-report is fewer than 20, then that particular sub-report is not generated. Most of the sub-reports present scores by various demographic categories (e.g., scores by gender).

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✓ **Local Item Reports:** One copy of this report is provided per client order if local items were given. This report is a general summary of the responses to items provided by the client (e.g., a site might ask questions about the quality of the training or instruction at that site). This report provides the number and percentage of examinees choosing each option for each item. Space for responses to 20 local items is available on the answer folder. In addition, there is space for responses to 10 "Local Use Only" items attached to each test block on the answer folder. This provides an opportunity to have test-specific local items (i.e., questions about experience using calculators).

ACT

Work Keys Assessments

Work Keys assessments are criterion referenced and permit individuals to demonstrate their competency levels in particular workplace skills. Work Keys currently offers the following assessments:

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- Reading for Information
- Listening and Writing
- Teamwork (available August 15, 1993)
- Applied Technology (available August 15, 1993)
- Locating Information (available August 15, 1993)

Work Keys assessments in the following areas are scheduled for future release:

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- Learning (1994)
- Speaking (1994)
- Observing (1994)
  (Quality Control)
- Managing Resources (199?)
- Budgeting (199?)

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Writing	40 min.	Audiotape	Telephone and in-person messages, meetings
Listening	40 min.	Audiotape	Telephone and in-person messages, meetings
Locating Information	35 min.	Multiple-choice	Placing and finding information in graphs, tables, blueprints, and other data graphics
Interpersonal Skills			
Teamwork	80 min. (2 parts, 40 min. each)	Video situations, multiple-choice response	Supporting the team while accomplishing the task

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WORKKEYS

APPLIED TECHNOLOGY

Applied Technology is a criterion-referenced assessment that measures an examinee's skill in solving problems of technological nature. The content covers the basic principles of mechanics, electricity, fluid dynamics, and thermodynamics as they apply to machines and equipment found in the workplace. Because this assessment is oriented toward reasoning rather than mathematics, any calculations required to solve a problem can be readily performed by hand. The emphasis is on identifying relevant aspects of problems, analyzing and ordering those aspects, and applying existing materials or methods to new situations.

The Work Keys *Applied Technology* scores are reported on a scale from 3 to 6, with Level 3 being the least complex and Level 6 being the most complex. Level 3 is established at about the point where a business would begin to show interest in assessing individuals. The highest level is set at the point where greater skill would require specialized training.

The scores from the *Applied Technology* assessment indicate to the employer what examinees can understand or do at each skill level. By examining job requirements and their employees' scores, employers can determine if a training program is indicated and, if so, where to begin that program. Employers can reassess employees after training to evaluate the effectiveness of training activities in terms of whether they now meet the requirements of the job. Further, employers can use the scores achieved by potential employees or by employees being considered for promotion to help determine the best candidates for their jobs. In addition, examinees who have taken the *Applied Technology* assessment are provided documentation of their individual skill levels that can be attached to school admission or job applications. They also receive suggestions for improving their skills.

The assessment contains 32 multiple-choice questions that increase in difficulty. Testing time is 45 minutes. Completion of general information (e.g., name) requires about 15 to 20 additional minutes and optional items can further extend this time.

The score scale is constructed so that the examinee's level score represents correct responses to at least 6 of the 8 questions presented at that and all lower levels. Therefore, an examinee who achieves a score of Level 4 will have responded correctly to at least 6 of the 8 questions at Levels 3 and 4, and to fewer than 6 questions at Level 5.

ACT

WORKKEYS

TEAMWORK

The *Teamwork* assessment measures an examinee's skill in choosing behaviors and/or actions that simultaneously support team interrelationships and also lead toward the accomplishment of work tasks. Examinees must recognize the goals of the team and identify ways to accomplish them in increasingly complex situations, such as those where team members have conflicting needs, talents, and opinions, or where the resources needed to accomplish the task are not readily available.

The Work Keys *Teamwork* scores are reported on a scale from 3 to 6, with Level 3 being the least complex and Level 6 being the most complex. Level 3 is established at about the point where a business would begin to show interest in assessing individuals. The highest level is set at the point where greater skill would require specialized training.

The scores from the *Teamwork* assessment indicate to the employer what examinees can understand or do at each skill level. By examining job requirements and their employees' scores, employers can determine if a training program is indicated and, if so, where to begin that program. Employers can reassess employees after training to evaluate the effectiveness of training activities in terms of whether they now meet the requirements of the job. Further, employers can use the scores achieved by potential employees or by employees being considered for promotion to help determine the best candidates for their jobs. In addition, examinees who have taken the *Teamwork* assessment are provided documentation of their individual skill levels that can be attached to school admission or job applications. They also receive suggestions for improving their skills.

This assessment is administered by VHS videotape that contains 12 simple to complex teamwork scenarios to which examinees must respond and/or identify the most appropriate teamwork response. It is divided into two parts, approximately 40 minutes each, with 18 multiple-choice response options in each part. Completion of general information (e.g., name) requires about 15 to 20 additional minutes and optional items can further extend this time.

The score scale is constructed so that the examinee's level score represents correct responses to at least 7 of the 9 questions presented at that and all lower levels. Therefore, an examinee who achieves a score of Level 4 will have responded correctly to at least 7 of the 9 questions at Levels 3 and 4 and to fewer than 7 questions at Level 5.

ACT

WORKKEYS

APPLIED MATHEMATICS

Applied Mathematics is a criterion-referenced assessment which measures an examinee's skill in setting up and solving math problems using mathematical reasoning skills generally required in the workplace. The assessment questions require the examinee to set up and solve word problems similar to those found in the workplace. Examinees use a calculator when taking the test because calculators are used on the job. Examinees are also given a reference page that includes all the formulas needed to complete the assessment.

The Work Keys *Applied Mathematics* scores are reported on a scale from 3 to 7, with Level 3 being the least complex and Level 7 being the most complex. Level 3 is established at about the point where a business would begin to show interest in assessing individuals. The highest level is set at the point where greater skill would require specialized training.

The scores from the *Applied Mathematics* assessment indicate to the employer what examinees can understand or do at each skill level. By examining job requirements and their employees' scores, employers can determine if a training program is indicated and, if so, where to begin that program. Employers can reassess employees after training to evaluate the effectiveness of training activities in terms of whether they now meet the requirements of the job. Further, employers can use the scores achieved by potential employees or by employees being considered for promotion to help determine the best candidates for their jobs. In addition, examinees who have taken the *Applied Mathematics* assessment are provided documentation of their individual skill levels that can be attached to school admission or job applications. They also receive suggestions for improving their skills.

The assessment contains 30 multiple-choice questions that increase in difficulty. Testing time is 40 minutes. Completion of general information (e.g., name) requires about 15 to 20 additional minutes and optional items can further extend this time.

The score scale is constructed so that the examinee's level score represents correct responses to at least 5 of the 6 questions presented at that and all lower levels. Therefore, an examinee who achieves a score of Level 5 will have responded correctly to at least 5 of the 6 questions at Levels 3, 4, and 5, and to fewer than 5 questions at Level 6.

ACT

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WORKKEYS

LISTENING AND WRITING

Listening and Writing measures two distinct but related skills. Listening and writing skills are measured using one assessment instrument because they are frequently used together in the workplace. Employees are often asked to listen to spoken information and then prepare a written document based on what they heard. While *Listening and Writing* is administered as a single assessment, the *Listening* assessment and the *Writing* assessment are scored separately and as a result they can be used independently.

These assessments are administered by audiotape that contains directions and six messages. Each message is given by a different speaker and is read twice. The speakers vary in gender and age and use assorted regional accents. Time is allowed between readings for examinees to make notes. After the message is read the second time, examinees have a specified amount of time to compose and write their message before the next message is read. Examinees may go back and work on earlier messages if they have time remaining during the testing period.

The *Listening* score is based on the accuracy and completeness of the examinee's response. Scores are reported on a scale of 0 to 5, with score level 0 indicating that no usable information has been recorded and score level 5 indicating that all pertinent information has been recorded and insight into the situation has been demonstrated (where appropriate). The *Writing* score is based on the clarity of the message and the use of sentence structure, grammar, and style in accordance with standard business English. Scores are reported on a scale of 0 to 5. Score level 0 indicates that the examinee did not record a message or that the examinee's message is completely garbled, illegible, not in English, or contains language that is inconsistent with standard business English. A score level 5 indicates that the message is written in a style and manner appropriate to a business situation and contains no grammatical errors. *Listening* and *Writing* are scored separately by scorers trained for the specific skill area.

The scores from the *Listening* and *Writing* assessments indicate to the employer what examinees can understand or do at each skill level. By examining job requirements and their employees' scores, employers can determine if a training program is indicated and, if so, where to begin the program. Employers can reassess employees after training to evaluate the effectiveness of training activities in terms of whether they now meet the requirements of the job. Further, employers can use the scores achieved by potential employees or by employees being considered for promotion to help determine the best candidates for their jobs. In addition, examinees who have taken the *Listening* and *Writing* assessments are provided documentation of their individual skill levels that can be attached to school admission or job applications. They also receive suggestions for improving their skills.

The assessments contain 6 messages. Testing time is 40 minutes. Completion of general information (e.g., name) requires about 15 to 20 additional minutes, and optional items can further extend this time.

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WORKKEYS

READING FOR INFORMATION

Reading for Information is a criterion-referenced assessment which measures the examinee's skill in reading and understanding work-related reading materials. Reading selections and questions based on the actual demands of the workplace appear in the form of memos, bulletins, notices, letters, policy manuals, and governmental regulations. Examinees are asked to identify the main points and significant details in these documents as well as understand the steps in procedures, the meaning of policies and regulations, and the relevance of the information presented to new situations. At the highest levels, examinees are asked to make decisions and draw conclusions based on the reading materials.

The Work Keys *Reading for Information* scores are reported on a scale from 3 to 7, with Level 3 being the least complex and Level 7 being the most complex. Level 3 is established at about the point where a business would begin to show interest in assessing individuals. The highest level is set at the point where greater skill would require specialized training.

The scores from the *Reading for Information* assessment indicate to the employer what examinees can understand or do at each skill level. By examining job requirements and their employees' scores, employers can determine if a training program is indicated and, if so, where to begin that program. Employers can reassess employees after training to evaluate the effectiveness of training activities in terms of whether they now meet the requirements of the job. Further, employers can use the scores achieved by potential employees or by employees being considered for promotion to help determine the best candidates for their jobs. In addition, examinees who have taken the *Reading for Information* assessment are provided documentation of their individual skill levels that can be attached to school admission or job applications. They also receive suggestions for improving their skills.

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ACT

WORKKEYS

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ACT

WORK KEYS

TARGETS FOR INSTRUCTION

The Work Keys instructional support component provides instructors, curriculum developers, and others involved in the job training process with materials that facilitate their efforts to help learners improve their workplace skills. A series of *Targets for Instruction* designed to aid the development of appropriate curricula and effective instructional strategies for teaching the Work Keys skill areas are central to this component. The targets for each of the operational Work Keys assessments (i.e., Reading for Information, Applied Mathematics, Listening, Writing, Locating Information, Applied Technology, and Teamwork) will be available by the fall of 1994.

The *Targets for Instruction* developed for each skill area are not intended to be a complete curriculum nor to replace an education methods course. The instructors who will use these targets know how to teach and, in many cases, are already teaching some aspects of these skill areas, although perhaps not in a formal way. The targets do not tell instructors how to teach but instead outline the skills and the levels of those skills that are assessed by Work Keys so instructors know what skills have been identified as important by the business community.

The general strategies instructors currently use to teach skills such as basic reading, writing, and mathematics are certainly applicable in preparing learners for the workplace. The *Targets for Instruction* extend those strategies by focusing on the distinct characteristics of such skills as they are encountered in the workplace. For example, instructions and policies included in the Work Keys Reading for Information assessment are based on actual workplace communications. Unlike materials produced for a traditional educational setting, workplace materials are not necessarily designed to facilitate instruction or general understanding. Workplace communications may not include a clear topic sentence early in the document or they may contain job-specific jargon that would not be familiar to the general public. Conversely, reading and content area texts which are the basis of most reading programs are usually organized to ease reading (e.g., they include a clear topic sentence near the beginning of the document and do not contain jargon without defining it). This difference may be a source of difficulty for employees as they try to read and comprehend the materials they encounter on the job. The *Targets for Instruction* identify differences of this sort, recommend materials appropriate for teaching workplace skills, and suggest activities effective in workplace skills instruction.

Curriculum experts, working in conjunction with content specialists, developed the *Targets for Instruction* for each of the Work Keys assessments. The *Targets for Instruction* provide detailed descriptions of the cognitive and content skills assessed by the Work Keys tests at each level. In addition, the targets give specific information about the skill requirements distinguishing each level from the one immediately preceding it. Instructors can use this information to devise strategies for helping learners build their proficiency in the Work Keys skills. The targets also contain suggestions about materials, techniques, and activities that are useful in teaching workplace skills, and they include lists of resources for instructors to consult in building curricula.

The Work Keys assessments, used in tandem with innovative curricula, can provide a powerful one-two punch of diagnostic analysis and prescriptive instructional intervention to improve the workplace skills of both students and employees. Secondary schools and postsecondary institutions can use the *Targets for Instruction* to supplement or reinforce existing curriculum, connecting that curriculum more directly to the demands of the workplace. Moreover, businesses can use this component to design training programs to upgrade their employees' skills.

ACT

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WORKKEYS

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The *Teamwork* assessment measures an examinee's skill in choosing behaviors and/or actions that simultaneously support team interrelationships and also lead toward the accomplishment of work tasks. Examinees must recognize the goals of the team and identify ways to accomplish them in increasingly complex situations, such as those where team members have conflicting needs, talents, and opinions, or where the resources needed to accomplish the task are not readily available.

The Work Keys *Teamwork* scores are reported on a scale from 3 to 6, with Level 3 being the least complex and Level 6 being the most complex. Level 3 is established at about the point where a business would begin to show interest in assessing individuals. The highest level is set at the point where greater skill would require specialized training.

The scores from the *Teamwork* assessment indicate to the employer what examinees can understand or do at each skill level. By examining job requirements and their employees' scores, employers can determine if a training program is indicated and, if so, where to begin that program. Employers can reassess employees after training to evaluate the effectiveness of training activities in terms of whether they now meet the requirements of the job. Further, employers can use the scores achieved by potential employees or by employees being considered for promotion to help determine the best candidates for their jobs. In addition, examinees who have taken the *Teamwork* assessment are provided documentation of their individual skill levels that can be attached to school admission or job applications. They also receive suggestions for improving their skills.

This assessment is administered by VHS videotape that contains 12 simple to complex teamwork scenarios to which examinees must respond and/or identify the most appropriate teamwork response. It is divided into two parts, approximately 40 minutes each, with 18 multiple-choice response options in each part. Completion of general information (e.g., name) requires about 15 to 20 additional minutes and optional items can further extend this time.

The score scale is constructed so that the examinee's level score represents correct responses to at least 7 of the 9 questions presented at that and all lower levels. Therefore, an examinee who achieves a score of Level 4 will have responded correctly to at least 7 of the 9 questions at Levels 3 and 4 and to fewer than 7 questions at Level 5.

ACT

Listening Skill

The *Listening* skill is an employee's skill in listening to work-related spoken information. In evaluating the level of the *Listening* skill required for the tasks of the job, consider how important it is for employees to have a complete and accurate understanding of spoken information. At lower skill levels, employees need to understand one or two helpful pieces of information. At higher skill levels, employees need to understand all of the important information, subtle details, and the tone of what they heard. Examples of the kinds of work-related messages associated with each level of the skill are provided. Higher levels of difficulty include the skills described in lower levels.

Listening Level 1

Employees must understand a little useful information from the spoken material. They must understand clues as to the gist of the message or a source of further information.

Listening Level 5

Employees must understand all the information from the spoken material. In addition, they must have insight into the situation, such as information about tone or subtle details.

Reading for Information Skill

The *Reading for Information* skill is an employee's skill in reading and understanding work-related reading materials. In evaluating the level of the *Reading for Information* skill required for the tasks of the job, consider both the difficulty of the materials employees must read (e.g., straightforward announcements using simple vocabulary or complex legal documents which describe complicated procedures and include technical language or specialized language) and how hard it is for employees to find and make use of the information they need in the reading materials (e.g., employees are required simply to use information stated directly or they must generalize and draw conclusions from the information). Five levels of difficulty are described, ranging from Level 3, the least complex, to Level 7, the most complex. Examples of reading materials associated with each level of the skill are provided. Higher levels of difficulty include the skills described in lower levels.

Reading for Information Level 3

Employees must read basic company policies, procedures, and announcements. These workplace reading materials are short and simple, and they use elementary vocabulary. All information employees need in order to choose an appropriate course of action is stated clearly in the materials; employees do not need to read between the lines.

Employees are required to

- understand the meaning of words that are defined in these workplace reading materials.
- figure out the meaning of elementary words that are not defined in these reading materials.
- understand the main ideas and straightforward details from these reading materials.
- understand when to perform each step in a series from reading directions.
- be able to apply instructions outlined in these reading materials to situations described in these reading materials.

Reading for Information Level 7

Employees must read materials which are very difficult: the information is detailed, the concepts are complicated, and the vocabulary is difficult. The jargon and technical terms used are not defined in the reading materials. Employees must generalize beyond stated situations, understand implied details, and figure out the reasoning behind stated policies and procedures.

Employees are required to

- figure out the definitions of difficult, uncommon jargon or technical terms from the context of the reading materials.
- figure out the general principles underlying described situations and apply them to situations neither described in nor completely similar to those in the reading materials.

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Writing Skill

The *Writing* skill is an employee's skill in writing work-related information. In evaluating the level of the *Writing* skill necessary for the tasks of the job, consider the importance of writing mechanics (including grammar, punctuation, and spelling), writing style (i.e., smooth and flowing rather than choppy), and professional tone (as defined by the lack of slurs, obscenities, and discriminatory terms) in an employee's written message. Examples of the kinds of work-related messages associated with each level of the skill are provided. Higher levels of difficulty include the skills described in lower levels.

Writing Level 1

Employees' writing does not convey information adequately because of an overall lack of proper sentence structure.

Writing Level 5

Employees' writing conveys information clearly. Writing does not contain any mechanical errors or slang. Writing has good sentence structure; a smooth, polished, and logical style; and precise language. In addition, messages represent the company in a professional manner.

Applied Mathematics Skill

The *Applied Mathematics* skill is an employee's skill in applying mathematical reasoning and problem-solving techniques to work-related problems. In evaluating the level of the *Applied Mathematics* skill required for the tasks of the job, consider the types of mathematical operations employees must perform (e.g., single-step or multiple-step mathematical operations, conversions either within or between systems of measurement); how the information in the problems is presented to employees (i.e., is the information presented in the order in which it is needed or must employees reorder it?); and whether all the information employees need to solve problems is provided (or must they derive some necessary information?). Keep in mind that employees are in a workplace where they have calculators and conversion tables to assist them. Five levels of difficulty are described ranging from Level 3, the least complex, to Level 7, the most complex. Examples of the kinds of work-related problems associated with each level of the skill are provided. Higher levels of difficulty include and build on the skills described in lower levels.

Applied Mathematics Level 3

Employees are required to

- add, subtract, multiply, or divide positive and negative numbers (e.g., 20).
- change a number from one form to another, using whole numbers (e.g., 10), fractions (e.g., ½), decimals (e.g., .75), or percentages (e.g., 12%); for example, employees may be required to convert $\frac{3}{8}$ to its equivalent percentage.

For example, employees might be required to add the prices of several products or to make the correct change for a customer.

Applied Mathematics Level 7

Employees are required to

- do several steps of reasoning and calculations.
- solve problems involving more than one unknown and nonlinear functions (e.g., rate of change).
- find mistakes in multiple-step calculations.
- figure out the information needed to solve a problem when the information presented is incomplete or implicit.

For example, employees might be required to convert between systems of measurement that involve fractions, mixed numbers, decimals, or percentages; to calculate multiple areas and volumes of spheres, cylinders, or cones; or to set up and manipulate complex ratios or proportions.

WORKKEYS

Job Profiling

The job profiling component is designed to help businesses identify the skills and skill levels employees must have to perform particular jobs effectively. It also gives individuals a clear picture of the skill levels they need to qualify for and be successful in the jobs they want. This component, combined with the assessments, instruction, and reporting, allows students and workers to make decisions about appropriate jobs and to identify areas they need to strengthen in pursuing their education and career goals.

The Work Keys job profiling procedure is designed to develop accurate profiles through a systematic task analysis that selects the tasks most important to a job and skill analysis that identifies the skills and skill levels required for effective performance on that job. Analysts trained and certified by Work Keys Industrial/Organizational psychologists conduct the job profiling.

In profiling a job, the analyst first obtains background information about the company where he or she is profiling and about how the job to be profiled fits into that company. Using this research, the analyst begins the process of task analysis. First, the analyst consults the *Dictionary of Occupational Titles* to develop a task list comprising the tasks most relevant to the job being profiled. Then the analyst meets with subject matter experts (SMEs), who are incumbent workers or supervisors for the job being studied, and they jointly tailor the list to make sure it accurately and completely describes the job. The SMEs may add, delete, consolidate, and/or change the descriptions of tasks to make sure they accurately depict their job as it is performed in their company.

After carefully examining this list of tasks, the SMEs rate the job tasks according to two dimensions: Importance and Relative Time Spent. The Importance refers to the significance of the task to overall job performance. Relative Time Spent is the amount of time spent performing this task compared to that spent on other tasks. The Importance rating is multiplied by the Relative Time Spent rating to obtain a Criticality rating. The tasks are then rank ordered according to their Criticality ratings. Finally, the SMEs review the rank ordering, remove the least important tasks, and make any necessary revisions to those tasks remaining.

After identifying the tasks most critical to job performance, the SMEs begin the process of skills analysis. During this process, the SMEs identify the tasks associated with each Work Keys skill and determine the Work Keys skill levels required to perform the critical tasks. The analyst presents detailed descriptions of each of the Work Keys skills to the SMEs. These descriptions include examples of problems or situations employees must deal with at each level. The SMEs decide, first individually, then as a group, which of the Work Keys skill areas are relevant to the job and the skill levels necessary for effective performance in their job. The final product of this profiling process is a document listing the most important tasks an individual in that job must perform and, for each relevant skill area, the skill level required on the job.

The Work Keys job profiles resulting from this process provide employers with job-related criteria that can assist them in making selection, promotion, and training decisions.

ACT

WORKKEYS

READING FOR INFORMATION

Reading for Information is a criterion-referenced assessment which measures the examinee's skill in reading and understanding work-related reading materials. Reading selections and questions based on the actual demands of the workplace appear in the form of memos, bulletins, notices, letters, policy manuals, and governmental regulations. Examinees are asked to identify the main points and significant details in these documents as well as understand the steps in procedures, the meaning of policies and regulations, and the relevance of the information presented to new situations. At the highest levels, examinees are asked to make decisions and draw conclusions based on the reading materials.

The Work Keys *Reading for Information* scores are reported on a scale from 3 to 7, with Level 3 being the least complex and Level 7 being the most complex. Level 3 is established at about the point where a business would begin to show interest in assessing individuals. The highest level is set at the point where greater skill would require specialized training.

The scores from the *Reading for Information* assessment indicate to the employer what examinees can understand or do at each skill level. By examining job requirements and their employees' scores, employers can determine if a training program is indicated and, if so, where to begin that program. Employers can reassess employees after training to evaluate the effectiveness of training activities in terms of whether they now meet the requirements of the job. Further, employers can use the scores achieved by potential employees or by employees being considered for promotion to help determine the best candidates for their jobs. In addition, examinees who have taken the *Reading for Information* assessment are provided documentation of their individual skill levels that can be attached to school admission or job applications. They also receive suggestions for improving their skills.

The assessment contains 30 multiple-choice questions that increase in difficulty. Testing time is 40 minutes. Completion of general information (e.g., name) requires about 15 to 20 additional minutes and optional items can further extend this time.

The score scale is constructed so that the examinee's level score represents correct responses to at least 5 of the 6 questions presented at that and all lower levels. Therefore, an examinee who achieves a score of Level 5 will have responded correctly to at least 5 of the 6 questions at Levels 3, 4, and 5, and to fewer than 5 questions at Level 6.

ACT

AMERICAN COLLEGE TESTING SERVICE
OVERVIEW OF THE WORK KEYS SYSTEM

AGENDA

TIME	ACTIVITY
3:30 - 3:45 p.m.	**WORK KEYS PROMOTIONAL VIDEO**
3:45 - 4:30 p.m.	**KEY COMPONENTS OF WORK KEYS** * Job Profiling * Skill Levels *Tests /Assessment Center *Scoring and Reporting *Targets for Instruction *Costs
4:30 - 4:40 p.m.	**WORK KEYS IN OMAHA AND OTHER COMMUNITIES**
4:40 - 5:00 p.m.	**QUESTIONS AND ANSWERS** How does MCC fit in?

Why?

WORK KEYS IN OMAHA AND OTHER COMMUNITIES

OMAHA JOB CLEARINGHOUSE

The first group of students to be assessed are the 200 seniors who are part of the Omaha Job Clearinghouse and will provide a benchmark for the Omaha Work Keys project. The students are from all seven of the Omaha Public Schools and are generally identified as not going on for post secondary education. These students will be tested in April 1994 in the following assessments: Reading for Information, Applied Mathematics, Applied Technology, Locating Information, Writing and Listening and Teamwork.

The total cost would be approximately $6,750.

The second group of students will be the total sophomore classes from Benson and Bryan High Schools.

BENSON HIGH SCHOOL

During April, 1994, all 310 Sophomores would take the Applied Mathematics and Reading for Information assessments. A sampling of 170 students would take the Writing and Listening assessments.

The second year of the project all new sophomores (310) would be given the Applied Mathematics, Reading For Information, Writing, and Listening assessments. A sampling of 170 students would be given the Applied Technology, Locating Information and Teamwork assessments. OPS estimates approximately 75 juniors would want to be retested in order to document improvement in skill levels..

The third year of the project all new sophomores (310) would be tested on all seven of the assessments. Approximately 75 juniors would want to be retested on selected assessments and all the seniors (approximately 200 remaining from original 310) would be tested or retested in all seven assessments.

The total cost for three year period would be approximately $43,407.

BRYAN HIGH SCHOOL

The same approach would be followed at Bryan but the numbers would be slightly less - There would be 300 students who would receive all the assessments and the sample would be 160 students. Students retaking the tests would be approximately 70.

The total cost for the three year period would be approximately $42,645.

- Omaha 2000 will be sending to training 2 additional job profilers at the end of April 1994.

- Other Customers:

Statewide: Southeast Community College,
Behlen Manufacturing, Columbus, Nebraska

Nationwide: University of Oklahoma, California Community Colleges, Consultants from Houston, Texas, Los Angeles, California, Iowa City, Iowa, and Tennessee.

AMERICAN COLLEGE TESTING SERVICE
OVERVIEW OF THE WORK KEYS SYSTEM

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4:40 - 5:00 p.m.	QUESTIONS AND ANSWERS How does MCC fit in?

WORKKEYS

READING FOR INFORMATION

Reading for Information is a criterion-referenced assessment which measures the examinee's skill in reading and understanding work-related reading materials. Reading selections and questions based on the actual demands of the workplace appear in the form of memos, bulletins, notices, letters, policy manuals, and governmental regulations. Examinees are asked to identify the main points and significant details in these documents as well as understand the steps in procedures, the meaning of policies and regulations, and the relevance of the information presented to new situations. At the highest levels, examinees are asked to make decisions and draw conclusions based on the reading materials.

The Work Keys ***Reading for Information*** scores are reported on a scale from 3 to 7, with Level 3 being the least complex and Level 7 being the most complex. Level 3 is established at about the point where a business would begin to show interest in assessing individuals. The highest level is set at the point where greater skill would require specialized training.

The scores from the ***Reading for Information*** assessment indicate to the employer what examinees can understand or do at each skill level. By examining job requirements and their employees' scores, employers can determine if a training program is indicated and, if so, where to begin that program. Employers can reassess employees after training to evaluate the effectiveness of training activities in terms of whether they now meet the requirements of the job. Further, employers can use the scores achieved by potential employees or by employees being considered for promotion to help determine the best candidates for their jobs. In addition, examinees who have taken the ***Reading for Information*** assessment are provided documentation of their individual skill levels that can be attached to school admission or job applications. They also receive suggestions for improving their skills.

The assessment contains 30 multiple-choice questions that increase in difficulty. Testing time is 40 minutes. Completion of general information (e.g., name) requires about 15 to 20 additional minutes and optional items can further extend this time.

The score scale is constructed so that the examinee's level score represents correct responses to at least 5 of the 6 questions presented at that and all lower levels. Therefore, an examinee who achieves a score of Level 5 will have responded correctly to at least 5 of the 6 questions at Levels 3, 4, and 5, and to fewer than 5 questions at Level 6.

ACT

WORKKEYS

APPLIED MATHEMATICS

Applied Mathematics is a criterion-referenced assessment which measures an examinee's skill in setting up and solving math problems using mathematical reasoning skills generally required in the workplace. The assessment questions require the examinee to set up and solve word problems similar to those found in the workplace. Examinees use a calculator when taking the test because calculators are used on the job. Examinees are also given a reference page that includes all the formulas needed to complete the assessment.

The Work Keys *Applied Mathematics* scores are reported on a scale from 3 to 7, with Level 3 being the least complex and Level 7 being the most complex. Level 3 is established at about the point where a business would begin to show interest in assessing individuals. The highest level is set at the point where greater skill would require specialized training.

The scores from the *Applied Mathematics* assessment indicate to the employer what examinees can understand or do at each skill level. By examining job requirements and their employees' scores, employers can determine if a training program is indicated and, if so, where to begin that program. Employers can reassess employees after training to evaluate the effectiveness of training activities in terms of whether they now meet the requirements of the job. Further, employers can use the scores achieved by potential employees or by employees being considered for promotion to help determine the best candidates for their jobs. In addition, examinees who have taken the *Applied Mathematics* assessment are provided documentation of their individual skill levels that can be attached to school admission or job applications. They also receive suggestions for improving their skills.

The assessment contains 30 multiple-choice questions that increase in difficulty. Testing time is 40 minutes. Completion of general information (e.g., name) requires about 15 to 20 additional minutes and optional items can further extend this time.

The score scale is constructed so that the examinee's level score represents correct responses to at least 5 of the 6 questions presented at that and all lower levels. Therefore, an examinee who achieves a score of Level 5 will have responded correctly to at least 5 of the 6 questions at Levels 3, 4, and 5, and to fewer than 5 questions at Level 6.

ACT

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WORKKEYS

LOCATING INFORMATION

Locating Information is a criterion-referenced assessment which measures the examinee's skill in using information taken from workplace graphic documents such as diagrams, blueprints, floor plans, tables, forms, graphs, charts, and instrument gauges. Examinees are asked to locate, insert, compare, and summarize information contained in one or more related graphics. At the highest level, examinees are asked to make decisions and draw conclusions based on information contained in one or more graphics.

The Work Keys *Locating Information* scores are reported on a scale from 3 to 6, with Level 3 being the least complex and Level 6 being the most complex. Level 3 is established at about the point where a business would begin to show interest in assessing individuals. The highest level is set at the point where greater skill would require specialized training.

The scores from the *Locating Information* assessment indicate to the employer what examinees can understand or do at each skill level. By examining job requirements and their employees' scores, employers can determine if a training program is indicated and, if so, where to begin that program. Employers can reassess employees after training to evaluate the effectiveness of training activities in terms of whether they now meet the requirements of the job. Further, employers can use the scores achieved by potential employees or by employees being considered for promotion to help determine the best candidates for their jobs. In addition, examinees who have taken the *Locating Information* assessment are provided documentation of their individual skill levels that can be attached to school admission or job applications. They also receive suggestions improving their skills.

The assessment contains 32 multiple-choice questions that increase in difficulty. Testing time is 35 minutes. Completion of general information (e.g., name) requires about 15 to 20 additional minutes and optional items can further extend this time.

The score scale is constructed so that the examinee's level score represents correct responses to at least 6 of the 8 questions presented at that and all lower levels. Therefore, an examinee who achieves a score of Level 4 will have responded correctly to at least 6 of the 8 questions at Levels 3 and 4, and to fewer than 6 questions at Level 5.

ACT

APPENDIX E8

VALMONT 2000: BUILDING A PARTNERSHIP IN WORKPLACE LEARNING

VALMONT
2000

OUTLINE

1. INTRODUCTION - LITERACY IN AMERICA
2. VALMONT 2000: A WORKPLACE LEARNING PROGRAM MODEL
3. PHASE 1: JOB ANALYSIS
4. PHASE 2: ASSESSMENT/COUNSELING
5. PHASE 3: TRAINING
6. VALMONT 2000 VIDEO
7. QUESTIONS AND ANSWERS

LITERACY IN AMERICA

Skills and Tasks for Jobs: A SCANS Report for America 2000 (Secretary's Commission on Achieving Necessary Skills, 1991)

Adult Literacy in America
U.S. Department of Education, 1993

- The U.S. Department of Education now estimates that 90 million adults are functional illiterates who are unable to use the traditional 3 R's, or to solve problems at a level that enables them to cope with the simplest of tasks.
- An estimated 50 million adults holding jobs in today's workforce are either functional or marginal illiterates.
- This workplace literacy problem is severely restricting American companies' ability to become high performance workplaces.

LITERACY IN AMERICA

National Adult Literacy Survey (NALS), September 1993.

- Three scales were developed to identify the types of literacy: Prose
  Literacy (Reading for Information) Document Literacy (Locating
  Information), and Quantitative Literacy (Applied Mathematics).

- The survey was based on interviews with more than 26,000 adults age 16 or older.

Results indicated that:

- 47% of the adult population, or 90 million adults, performed at the lowest two levels of prose, document, and quantitative proficiencies. Of those performing in the lowest level: 25% were immigrants who may have been just learning to speak English; nearly two-thirds had ended their education before completing high school; one third were age 65 or older;

- Of those adults performing in the lowest levels, 66 to 75% performing in the lowest level and 93 to 97% performing in the second lowest level described themselves as being able to read or write English "well" or "very well".

- Literacy proficiencies of young adults assessed in 1992 were somewhat lower, on average, than the proficiencies of young adults who participated in a 1985 literacy survey.

- Older adults were more likely than middle-aged and younger adults to demonstrate limited literacy skills, perhaps due in part to the fact that older adults tend to have completed fewer years of schooling.

- Black, American Indian/Alaskan Native, Hispanic, and Asian/Pacific Islander adults were more likely than White adults to perform in the lowest two literacy levels.

- Individuals reporting having a physical, mental, or other health condition that kept them from participating fully in work or other activities were far more likely than other adults to demonstrate performance in the lower two levels.

- Men demonstrated the same average prose proficiencies as women, but their document and quantitative proficiencies were somewhat higher.

- Adults in the Midwest and West had higher average proficiencies than those residing in either the Northeast or South.

- Adults in prison were far more likely than those in the population as a whole to perform in the lowest two literacy levels. These incarcerated adults tended to be younger, less well educated, and to be from minority backgrounds.

"...The vast majority of Americans do not know that they do not have the skills they need to earn a living in our increasingly technological society and international marketplace."

(Education Secretary Richard Riley)

LITERACY IN AMERICA

American Management Association (AMA) Survey, 1994

- Of 65,617 job applicants tested by firms surveyed by AMA, 35.5 percent were deficient in "the ability to read instructions, write reports, and/or do arithmetic at a level adequate to perform common workplace tasks."
- In the latest survey, deficiency rates were highest in the public sector (47 percent), followed by manufacturing (42 percent), wholesale and retail traders (22 percent), financial service firms (21 percent), and providers of business and professional services (13 percent).
- 24.9 percent of survey respondents reported deficiency rates of 50 percent or higher.
- Ninety percent of the firms said they do not hire applicants who lack basic math and reading skills.
- The survey found that many more employers now test current employees for basic skills than when AMA stated the annual surveys. In 1989, AMA reported that only 6.1 percent of firms tested current employees for basic math and reading skills, but in 1994, the rate was 27.3 percent, down from 33 percent in 1993.
- For those current workers deficient in basic skills, 54 percent of employers said they ware prepared to offer remedial training, according to the survey. Those already offering basic skills training - 20 percent of the surveyed firms - said it costs them an average of $244 per trainee.

AVAILABLE FUNDING FOR ADULT LITERACY EFFORTS

U.S. Department Of Education - Federal/State Program Dollars

	1992	1993	1994 Request
State Programs	$235.8	$254.6	$261.5
National Programs	9.0	8.8	9.3
Literacy Training for Homeless Adults	9.8	9.6	10.0
Workplace Literacy Partnerships	21.8	18.9	22.0
State Literacy Resource Centers	5.0	7.9	7.9
Literacy Programs for Prisoners	5.0	4.9	5.1
Total	$287.3	$304.7	$315.7

Note: These values are expressed in millions

State Programs are the primary vehicle for supporting literacy efforts nationally. The Department makes formula grants to the States for programs to teach basic skills to illiterate adults and to help adults attain high school equivalency.

National Programs, which fund the National Institute for Literacy and a variety of evaluation and technical assistance activities.

Literacy Training for Homeless Adults, which makes State grants to develop and implement programs of literacy training and basic skills remediation for the adult homeless.

Workplace Literacy Partnerships for projects that demonstrate methods of providing literacy training to meet workforce needs.

State Literacy Resource Centers, a program that has recently established a network of 43 centers to coordinate the delivery of literacy services and advise States and local providers on strengthening their literacy programs.

Literacy Programs for Prisoners, which makes grants to State and local correctional agencies to establish programs to help incarcerated persons achieve functional literacy and life skills.

OTHER ADULT LITERACY EFFORTS

Federal / State Funded

- Workplace Literacy Resource Centers
  California, Connecticut, Indiana, Illinois, Pennsylvania
- Workplace Educational Linkages Project for Small Business
  University of Northern Illinois
- National Literacy Hotline
- National Adult Literacy and Learning Disabilities Center

Privately Funded

- According to the American Society for Training and Development (ASTD), American corporations are spending about $30 billion a year to train their employees. Employers find that having a highly skilled, well-trained work force saves them money in the long run, so they see the benefits in providing the training.

VALMONT 2000
A WORKPLACE LEARNING PROGRAM MODEL

PHASE 1 JOB ANALYSIS →

STEP 1

Job Analysis Conducted

- 58 hours per analysis

PHASE 2 ASSESSMENT/COUNSELING →

STEP 2

TABE Testing Given To Individual Departments

- 5 hours of testing - given during individual's current shift

STEP 3

TABE Test Results Session Scheduled With Individuals

- 35 minute session with Valmont 2000 Counselor - scheduled within 2 weeks of TABE testing.)

PHASE 3 TRAINING

STEP 4

Training Classes Held For Small Groups In Basic Skills Needing Review

- 1 ½ hours two times per week per 8 weeks session
- 5 sessions in 18 months
- 9 employees per training class

STEP 5

Post Assessment Of Skills Reviewed In Training Classes

STEP 6

Exit Program Or Return To Step 4 If Needed

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STAFF RESOURCES

ADMINISTRATIVE:

- 9 MEMBER VALMONT 2000 TASK FORCE
- 1 FULL TIME DIRECTOR
- 1 FULL TIME SECRETARY
- 1 PART TIME SECRETARY

PHASE 1: JOB ANALYSIS

- 3 JOB ANALYSTS

PHASE 2: ASSESSMENT/COUNSELING

- 6 COUNSELORS

PHASE 3: TRAINING

- 1 FULL TIME INSTRUCTOR
- 7 PART TIME INSTRUCTORS
- 6 TEACHER ASSISTANTS
- 4 CURRICULUM CONSULTANTS

PHASE 1: Job Analysis

Job Analysis Flow Chart

Step 1
Preliminary Administrative Work
- Develop Job Analysis Team.
- Overview Job Analysis Procedure.
- Establish Schedules.

→

Step 2
Job Site Visits
- One visit per Shift.
- Observe Work Being Performed
- Video tape
- Collect work sample reading, writing and math items.

→

Step 3
Interviews
- Interviews will be in a structured format utilizing a modified version of the PAQ.
- To determine Job Tasks.
- Interview In Pairs.
- Administer Fleishman and Wonderlic

→

Step 4
Prepare Preliminary Job Analysis Inventory
- Job Tasks.
- Reading, Writing, & Math Tasks.
- Other cognitive abilities.

Step 5
Task Match & Reconciliation
- Compare Preliminary Job Analysis Inventory with Job Description, Job Procedure Information and DOT Job descriptions.
- Discrepancies to be reconciled by the Job Analysis Team

→

Step 6
Conduct Skill Assessment
- Assess reading grade equivalencies and writing level.

→

Step 7
Integration
- Add reading grade equivalencies and writing levels to job analysis preliminary report.

→

Step 8
Rating Procedure
- Independent ratings furnished by Job Analysis Team members.
- Yes-No determination of reading, writing and math tasks.
- Link reading, writing and math tasks to job tasks.

Step 9
Prepare Final Report
- Calculate mean ratings.
- Prepare report title page.
- Describe data collection procedures.

→

Step 10
Skill Assessment Team
- Overview job tasks and review video tape of job.
- Review and approve reading, writing and math skills.

→

Step 11
Approval of Final Report
- Job Analysis Team Members.
- HR Representative.

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Job Analysis Procedure

Step 1: **Preliminary Administrative Work**

A Job Analysis Team will be developed. The team shall consist of 4 persons: a manager who is familiar with the job being analyzed, immediate supervisor, and two persons who perform the job regularly. The Job Analysis Team will be responsible for scheduling job-site visits and interviews, reviewing the job analysis product, providing job task and cognitive ability ratings, and approving the final job analysis report.

Step 2: **Job-Site Visits**

The Job Analyst will conduct work-site visits to observe and video tape the job as it is performed. Typically, three site visits will be conducted: one visit lasting two hours for each shift.

Step 3: **Interviews**

At the onset of each interview, incumbents will be asked to complete the Cognitive Abilities Section of the Fleishman Job Analysis Survey, and a cognitive ability measure. The Job Analyst will then interview Job Knowledge Experts who, preferably, are not members of the Job Analysis Team. Typically, the Job Analyst will interview two Job Knowledge Experts at one time. The interviews will utilize a structured format with a modified version of the PAQ in addition to forms developed by MCC in order to determine the job tasks performed by incumbents.

Step 4: **Preliminary Job Analysis Inventory**

A preliminary job analysis inventory will be developed to include a listing of job tasks, reading, writing, and math tasks, and other cognitive abilities.

Step 5: **Task Match and Reconciliation**

The Job Analyst will compare the preliminary job analysis inventory to its corresponding job description, available job procedure information, and Department of Labor DOT job descriptions. Discrepancies will be reconciled by the Job Analysis Team.

Step 6: **Skills Assessment**

All job relevant reading and writing samples will be collected for analysis.[1] Readability will be calculated using the RIGHTWRITER program which implements the Flesch-Kincaid formula to calculate the Readability index. A range of acceptable reading competencies are developed from the average of all reading samples. Writing standards are developed via review of the Writing samples and the amount of discourse required by each.

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Step 7: **Integration**

The reading grade equivalencies and writing levels, based upon the reading and writing samples, will be added to the job analysis.

Step 8: **Rating Procedure**[1]

Job Analysis Team members will independently provide job task and cognitive ability ratings of frequency and importance. Detailed attention will be given to the areas of reading, writing, and mathematics to determine the reading, writing, and math tasks performed as part of the job and their linkage to job tasks.[2]

Step 9: **Final Report**

The Job Analyst will calculate a mean frequency and importance rating for each task and cognitive ability. A report title page will be developed to include report date, job tittle, work summary, an overview of the job analysis procedure, name of Job Analyst and members of the Job Analysis team, as well as a detailed description of the data collection processes (date and time of site visits, names of site contact, and interviewees).

Step 10: **Skill Assessment Team**

Skill Assessment Team members will review the final report. Team members will also view the video tape of job performance recorded during the job site visits (Step 2). Finally, the Skill Assessment Team will review all reading and writing samples and approve the final report.

Step 11: **Approval of Final Report**

Job Analysis Team members, members of the Reading and Writing Skills Assessment Teams, and a Human Resource Representative will review and approve the Final Report.

---

[1] Note. Reading grade equivalencies and writing levels based on the Scale of General Education Development (GED), as assessed by the Reading and Writing Skills Assessment Teams, will be validated by a comparison with the Cognitive Abilities Section of the Fleishman Job Analysis Survey, Dictionary of Occupational Titles (DOT) codes, math, writing, and reading skills determined by the Job Analyst, and Subject Matter Experts at Metropolitan Community College.

[2] Note. Reading grade equivalencies and writing levels based on the Scale of General Education Development (GED) will be determined by the Reading and Writing Assessment Teams at a later point in time.

PHASE 2: ASSESSMENT

Test Of Adult Basic Education (T.A.B.E.)

- The T.A.B.E. is actually a combination of several tests that cover different areas of reading, math, and language expression.

  Reading Tests cover vocabulary (understanding the meaning, both stated and implied, of a short passage).

  Reading Comprehension (understanding the meaning, both stated and implied, of a short passage).

  Math Computation (adding, subtracting, multiplying, and dividing)

  Math Concepts and Applications (such as problem solving and measurement).

  Language Tests cover mechanics (capitalization and punctuation), expression (sentence structure and word usage), and spelling.

PHASE 2: COUNSELING

T.A.B.E. Score Report

T.A.B.E. Score Report

```
TABE  (Tests of Adult Basic Education)                      CTB/McGraw-Hil
==========================================================================
INDIVIDUAL TEST and OBJECTIVES PERFORMANCE REPORT         REPORT DATE: 09 Aug 9
--------------------------------------------------------------------------
EXAMINEE NAME/ID:                          INSTITUTION:  Metro Comm College
EXAMINER:           KEVIN SPIER            SITE:         Special Needs
GROUP:              VAL1020                SPECIAL CODES: ..................
--------------------------------------------------------------------------
CONTENT AREA        NUMBER   SCALE         GRADE          || PERCENTILE GROUP:
  TEST              CORRECT  SCORE   SEM   EQUIV   %ILE   || Adult Basic Education
--------------------------------------------------------------------------
Reading - D/5 - 03 Aug 93                                 ||    Predicted*   GED
  Vocabulary          3      607     95     2.5      8    ||    GED Range   Score
  Comprehension      10      691     29     4.6     16    ||        |         |
  Total                      649            3.1     11    ||        |         |
Mathematics - D/5 - 03 Aug 93                             || Writing:  31-41
  Computation         8      624    103     3.0      4    || Math:     28-38
  Concepts/Appl.     18      707     14     5.6     37    || Science:  25-35
  Total                      666            3.6      9    || Reading:  23-33
Language - D/5 - 03 Aug 93                                || Soc Stud: 23-33
  Mechanics           6      607     58     2.0      7    ||
  Expression         15      633     21     2.4     13    || Predicted
  Total                      620            2.3      9    || Average:  27-35
Total Battery                645            3.0      8    ||
Spelling - D/5 - 03 Aug 93                                ||*68% chance of scoring
                      7      620     82     2.5      4    || within this range
--------------------------------------------------------------------------
OBJECTIVES PERFORMANCE
--------------------------------------------------------------------------
OBJECTIVE                     # CORR/  MAS- |OBJECTIVE                    # CORR/  MAS-
                              # POSS   TERY |                             # POSS   TERY
--------------------------------------------------------------------------
Reading Vocabulary                          |Math Concepts & Applications
  Synonyms                      0/7         |  Numeration                   6/9
  Antonyms                      0/4         |  Number Sentences             0/4
  Homonyms                      0/4         |  Number Theory                2/5
  Affixes                       1/4         |  Problem Solving              5/12
  Words in Context              2/11        |  Measurement                  2/6
Reading Comprehension                       |  Geometry                     3/4      ÷
  Passage Details               4/9         |Language Mechanics
  Character Analysis            0/4         |  Pronoun I,Nouns,Adject.      1/4
  Central Thought               2/9         |  Beginning Words, Titles      1/4
  Interpreting Events           2/8         |  Period,Question,Excl.Pt.     3/4      ÷
  Writing Techniques            1/7         |  Comma,Colon,Semi,Quot.       1/10
Math Computation                            |  Proofreading                 0/8
  Add Decimals                  1/4         |Language Expression
  Add Fractions                 1/4         |  Pronouns                     2/4
  Subtract Decimals             1/4         |  Verbs                        3/5
  Subtract Fractions            0/4         |  Adjectives,Adverbs           3/5
  Multiply Whole_Numbers        1/4         |  Sentence Recognition         1/6
  Multiply Decimals             3/4     ÷   |  Sentence Combining           1/9
  Multiply Fractions            0/4         |  Topic Sentence               3/10
  Divide Whole Numbers          1/4         |  Sentence Sequence            2/6
  Divide Decimals               0/4         |Spelling
  Divide Fractions              0/4         |  Vowel Sounds                 2/12
  Integers & Per Cents          0/4         |  Consonant Sounds             2/8
  Exponents & Expressions       0/4         |  Structural Units             3/10
```

PHASE 2: COUNSELING

VALMONT 2000

INDIVIDUALIZED EDUCATIONAL PLAN/CAREER PLANNING

DATE: 12 Aug 93

EMPLOYEE NAME: ______ SSN: ______ EMPLOYEE ID #: 1870

DEPT.: 1020 JOB TITLE: Welder "B" BUS PHONE: X 3536 HOME PHONE: ______

STREET ADDRESS: ______ CITY: ______ STATE: NE ZIP: ______

EDUCATIONAL DATA - (check all that apply)

✓ High School Diploma Year Acquired Valley H.S. 1976

___ GED Year Acquired ______

___ College/Post Secondary Study Metro Tech - Developmental Reading

Name(s) of College(s) You Have Attended ______

___ No Degree Study Area: ______ Date: ______

___ Associates' Degree Study Area: ______ Date: ______

___ Bachelor's Degree Study Area: ______ Date: ______

___ Master's Degree Study Area: ______ Date: ______

ASSESSMENT DATA

___ Test of Adult Basic Education (TABE) results attached to IEP.

___ Required Competencies by Job Title (On File)

___ Other Assessments (Please Specify):

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7/93

LIST OF COMPETENCIES IN NEED OF IMPROVEMENT:

	Start Date	Date Mastered		Start Date	Date Mastered
READING VOCABULARY – ALL AREAS			LANGUAGE EXPRESSION –		
READING COMPREHENSION – ALL			ALL AREAS		
MATH COMPUTATION – ALL AREAS BUT X DECIMALS			SPELLING – ALL AREAS		
MATH CONCEPTS – ALL AREAS BUT GEOMETRY					
LANGUAGE MECHANICS – ALL					
AREAS BUT PERIOD ? , : EXCLAMATION POINT !					

CAREER PLAN

Educational Plan - (Check all that relate to the Employee):

	LEVEL	STUDY AREA(S)	SCHOOL NAME	START DATE
	On-the-job Training			
✓	Skill Upgrading/Development	see above	Metro C.C.	to be determine
	Vocational Certificate			
	Associate's Degree			
	Bachelor's Degree			
	Master's Degree			
	Competency-Based Credit			
	CLEP Testing			

IEP/CAREER PLAN REVIEW

Date: 1-6-94

_____ has met objectives ✓ has shown improvement _____ additional intervention (please specify):

... is extremely pleasant & motivated to learn. Our focus has been phonics - particularly vowel sounds, blends & digraphs, as well as sight words. ... is very artistic, so we are using this ability and allowing him to illustrate words & sounds to form a memory association. Progress has been quite gradual, but as ... seems to be gaining some confidence, we expect the progress to continue.

Diane Horwan

Employee's Signature: Date: 12 Aug '93

Counselor's/Instructor's Signature: Date: 12 Aug 93

ADDITIONAL COMMENTS

Employee Name: ______________________

Additional Information (from IEP Career Plan Review)

needs work in all areas. He has serious deficiencies. Be sure that planning takes into account the nature of his problems.

Ralph Elwall
(See me)

WORKPLACE LITERACY IS NOT:

- Technical Training
- Vocational Education
- Adult Basic Education
- Adult Literacy
- Career Related College Courses

BASIC SKILLS APPLICATIONS IN THE WORKPLACE

READING

- Locating information
- Identifying relevant information in manuals.
- Interpreting schematics and graphs using gauges and symbols.
- Following procedural directions using multiple sources of information.
- Matching alternate criteria to existing conditions.

MATH

- Problem solving.
- Estimating results or progress.
- Calculating specifications and machine calibrations.
- Computing costs savings.
- Collecting graphing, and analyzing data.

WRITING

- Passing on information.
- Reporting information.
- Responding to requests.
- Making requests.
- Listen to spoke information and write a message.
- Entering information into computer.
- Sending messages via e-mail.
- Taking notes in group meetings.
- Completing forms/applications.

COMMUNICATION

- Asking questions.
- Presenting information to management or coworkers.
- Conducting team meetings.
- Participating on interview teams.

OVERVIEW OF CURRICULUM

- The Valmont 2000 Workplace learning curriculum allows the employee to apply his/her basic skills.
- Utilizing a problem-solving strategy, to solve workplace problems.
- The instructional program utilizes a competency or performance -based approach.
- Commercial and custom designed materials are used in the classes.
- A computer-based interactive video program is used to supplement the curriculum.

DESIGN OF THE CURRICULUM

The partnership between Valmont and Metropolitan Community College is further illustrated through the design of curriculum.

Input was solicited from Valmont's Production Managers, Human Resource Representatives from the respective divisions, Shop Supervisors/Leadmen, and Employees.

Three Curriculum Action Teams (CAT) were crated to take advantage of each instructor's strengths to develop course content in Reading, Writing, and Math.

The result of the shared input from Valmont and Metropolitan Community College is following:

- Course syllabus including a course outline.
- Pre and Post Tests.
- Unit Tests
- Learning Guides (Activity Packets/Work problems)
- Reference Guides
- Textbook
- Availability of computer - assisted instruction.

In addition to the instructors, Teacher Assistants are used to allow employees to receive individualized instruction and guidance in their learning activities.

EVALUATION

1. Employee

- Pre-assessments in the respective content area.
- Learning Guide check ups.
- Unit tests (80% minimum)
- Post Assessments
- Self-Assessment surveys

  - Communication
  - Multi purpose

2. Instructor

A 360° performance evaluation concept was developed to assist instructors in their professional growth. This format involves feedback from the following people:

- Valmont 2000 class participants.
- Teacher Assistants
- Fellow Instructors (Peer Evaluations)
- Instructors - Self evaluations
- Supervisors

Direct observation and video taping are used. The instructors are evaluated during each session they teach.

3. Company wide evaluation measures

- Production
- Quality
- Scrap-rate
- Safety
- Use of Tuition Reimbursement

PHASE 3: TRAINING

Sample Work Place Problems - Math

Problem 1: Valmont's welding department supervisor states that one of its welders can weld 2 poles per hour. How many such poles can 27 welders weld if they work 45 hours each?

Problem 2: What is the total length of wire on 14 spools if each spool contains 150 ft.?

Problem 3: A welder needs 25 lengths of steel, each 9' (feet) long. What is the total length of steel he needs?

Problem 4: During a blizzard, Alfonzo, a Valmont driver, hauled pipe for a 5 hour trip. He drove for two hours at 19 miles per hour and three hours at 47 miles per hour. How far did Alfonzo drive?

Problem 5: There are nine buildings in the Valmont Executive Apartment Complex with each building having twelve floors. On every floor, there are six apartments. What is the total number of apartments in the complex?

Sample Workplace Problems - Writing

DIRECTIONS: Choose 2 work problems and write an informal message. You must complete a writing strategy worksheet and write a message for each problem you chose. Remember to proofread your work.

PROBLEM 1: At the end of your shift, you notice that there is a shortage of 13 T-pole for the Jones shipment. Write a message to the leadman of the next shift about the shortage.

PROBLEM 2: As you begin to prepare a shipment to the Ed Moss Construction Company, you noticed some missing parts (please supply the name of the missing parts) to a light pole, leave a note to your supervisor.

PROBLEM 3: You noticed that a move tag had the wrong part number. The tag shows that the part number is 35171, but you know that it should be 35711. This problem has happened twice before. Write a message to your supervisor about the mistake.

PROBLEM 4: Before you leave for the day, leave a message about the day's production, for the next shift.

Sample Workplace Problem - Writing

Name ____________________
Date ____________________

LESSON 3 - INFORMAL MESSAGES WORK PROBLEMS

You noticed that Bill Jones, a welder in T-pole, is having trouble with undersized/poor quality welds (e.g., he can't keep the contour of the Vang). You've also noticed that he's had several reject tags on his work. Leave a message to the shift supervisor concerning the problem.

Developed by Brian and Greg - Sub Arc Base Dept. 2151 (1994)

Sample Workplace Problems- Reading

TOPIC AND MAIN IDEA WORK PROBLEMS

Read the following paragraph looking for the topic and main idea:

> (1) There were several specific assumptions made in the development of Valmont's Employee Assistance Program. (2) First of all, most people want to do a good job and to be judged on the merits of their own case. (3) Also, all people have a contribution to make, and most want to be involved in decisions that affect their future. (4) Finally, most people desire to be involved in the resolution of problems which affect them or their family.

1. Topic:

____

2. Main idea is sentence # _______.

Choose a one-word topic for the following paragraph. Then, write an appropriate title.

There is no charge for employee's or immediate family member's visit(s) with the Employee Assistance Program Counselor. Valmont pays full cost for this service; however, costs incurred resulting from EAP Counselor referrals to other sources will be the responsibility of the employee. Valmont's Group Medical and Disability Income coverages will apply according to the provisions of the plans.

3. Topic

____

4. Title:

____

APPENDIX E9

DATE

JOB ANALYSIS OF THE REMAINING POSITIONS

July '93 and Ongoing

New Analysis	Possible Revised Analysis*
- Slitter	- Shipping
- Pole-Tube Line	- Finish Area
- Drafters in T-Pole	- Paint Facility
	- Small Mill

* The necessity for revised analysis is yet to be determined.

July '93/Aug. '93

TABE TESTING

- * Will test all employees in the position which underwent job analysis
- * Will contact supervisor as to convenient times for testing
- * Will council employees on an individual basis as to test results and course curriculum one week after testing.

July '93/Aug. '93/Sept. '93

Begin Classes

Individual Testing/Training Process

① JOB ANALYSIS CONDUCTED

(18 hours of data collection)

→

② TABE TESTING GIVEN TO INDIVIDUAL DEPARTMENTS

(5 hours of testing - given during individuals current shift)

→

③ TABE TEST RESULTS SESSION SCHEDULED WITH INDIVIDUALS

(35 minute session with counselor - scheduled with 2 weeks of TABE testing*.)

→

④ TRAINING CLASSES HELD FOR SMALL GROUPS IN BASIC SKILLS NEEDING REVIEW

(1 hour two times per week per class)

→

⑤ POST ASSESSMENT (TESTING) OF SKILLS REVIEWED IN TRAINING CLASSES

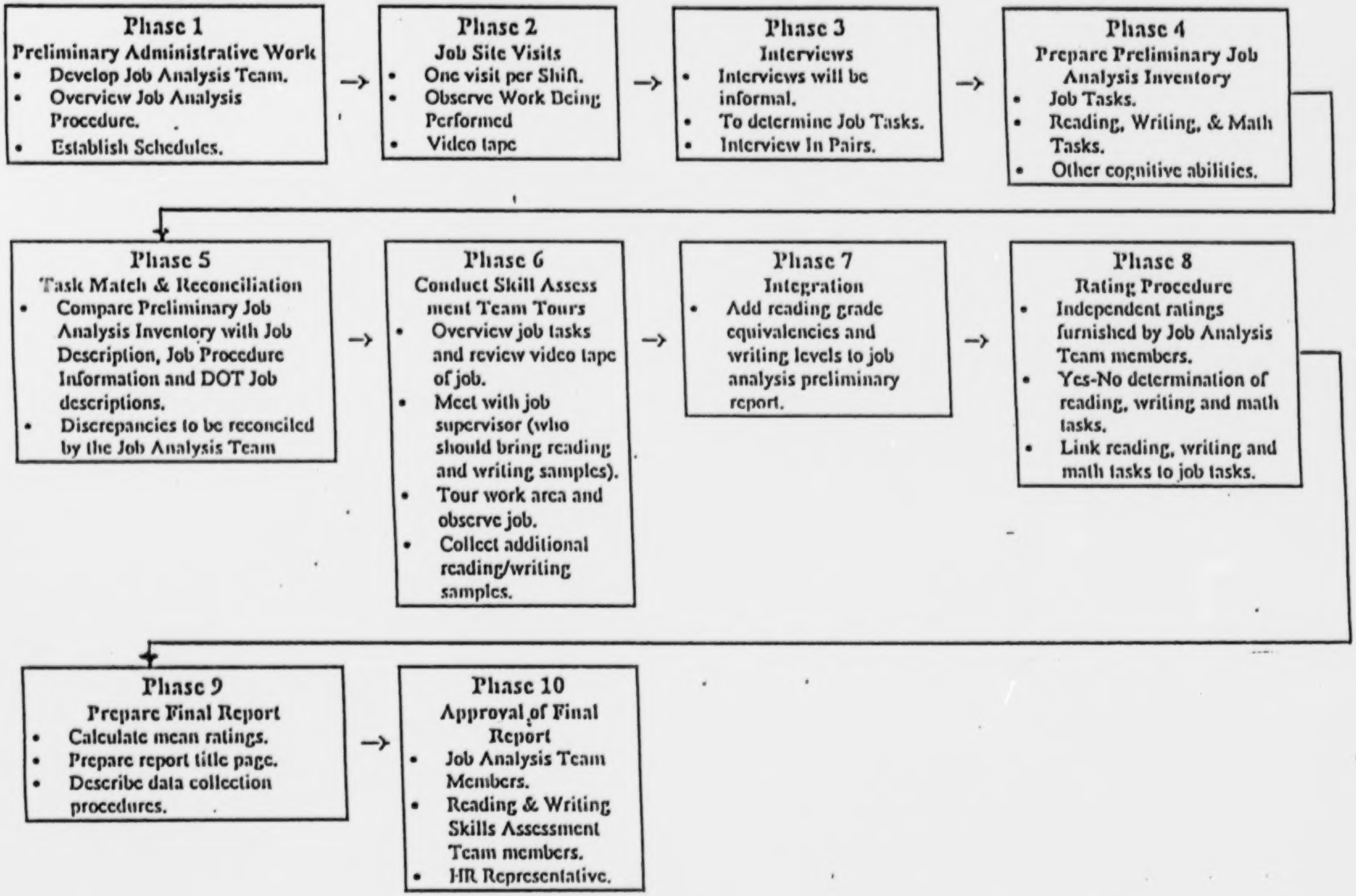
(35 minute session with counselor)

→

⑥ EXIT PROGRAM OR RETURN TO STEP 4 IF NEEDED

*unless other circumstances arise , e.g., vacation, medical leave, etc..
10/26/93 11:51 AM

Job Analysis Flow Chart



Phase 1
Preliminary Administrative Work
- Develop Job Analysis Team.
- Overview Job Analysis Procedure.
- Establish Schedules.

Phase 2
Job Site Visits
- One visit per Shift.
- Observe Work Being Performed
- Video tape

Phase 3
Interviews
- Interviews will be informal.
- To determine Job Tasks.
- Interview In Pairs.

Phase 4
Prepare Preliminary Job Analysis Inventory
- Job Tasks.
- Reading, Writing, & Math Tasks.
- Other cognitive abilities.

Phase 5
Task Match & Reconciliation
- Compare Preliminary Job Analysis Inventory with Job Description, Job Procedure Information and DOT Job descriptions.
- Discrepancies to be reconciled by the Job Analysis Team

Phase 6
Conduct Skill Assessment Team Tours
- Overview job tasks and review video tape of job.
- Meet with job supervisor (who should bring reading and writing samples).
- Tour work area and observe job.
- Collect additional reading/writing samples.

Phase 7
Integration
- Add reading grade equivalencies and writing levels to job analysis preliminary report.

Phase 8
Rating Procedure
- Independent ratings furnished by Job Analysis Team members.
- Yes-No determination of reading, writing and math tasks.
- Link reading, writing and math tasks to job tasks.

Phase 9
Prepare Final Report
- Calculate mean ratings.
- Prepare report title page.
- Describe data collection procedures.

Phase 10
Approval of Final Report
- Job Analysis Team Members.
- Reading & Writing Skills Assessment Team members.
- HR Representative.

Practicum Opportunity

Valmont Industries, Inc., headquartered in Valley, Nebraska, is a large manufacturer of irrigation systems and light and power transmissions poles. It has entered into an educational partnership with Metropolitan Community College. The goal of this partnership is to improve the educational skills of the Valmont workforce so that Valmont Industries can continue to successfully compete in a global economy. This document will provide an overview of the program and will also provide the details of a practicum opportunity.

Program Overview

Metropolitan Community College began to assist Valmont Industries with a math skills training program in 1989. Since then, with the addition of federal vocational educational and State of Nebraska Economic Development funding, the educational partnership between Valmont and Metropolitan Community College (MCC) began to grow. Today, the process begins with a job analysis consisting of 18 hours of observation and interviews. Its primary objective is to determine the basic educational requirements of the job. Once the job analysis is completed, incumbent cognitive abilities and reading, writing, and mathematics skills are assessed and compared to the requirements of the job. When job related educational skill deficiencies are found, an individualized educational plan and training curriculum is developed and administered. The program is called Valmont 2000.

Job Analysis Procedure

The job analysis procedure consists of nine phases.

Phase one. During phase one, a Job Analysis Team is developed. When possible, the Team consists of four persons: a supervisor and lead-person, familiar with the job, and two incumbents. The Job Analysis Team is responsible for scheduling job-site visits and interviews, providing job task, job skill, and cognitive ability ratings, and reviewing the final job analysis product.

Phase two. In phase two, the Job Analyst conducts 6 hours of work-site visits and video tapes the job as it is typically performed. Three site visits are conducted, each visit lasting two hours.

Phase three. Phase three is the interview phase. During this phase, incumbents complete the Cognitive Abilities section of the Fleishman Job Analysis Survey and a cognitive ability measure (the Wonderlic Personnel Test). Once completed, the Job Analyst conducts 12 hours of paired interviews, using an interview guide.

Phase four. In phase four, a Preliminary Job Analysis Inventory is prepared. The Preliminary Job Analysis Inventory includes an overview of the data collection procedure, names of site contacts and persons interviewed, and dates of site visits and interviews. It also includes a listing of job tasks and documents which are read or written, mathematics skills, and required cognitive abilities (e.g., inductive, deductive reasoning).

Phase five. In phase five, the Job Analysts compares the Preliminary Job Analysis Inventory to its corresponding job description and available job procedure information, as well as the Dictionary of Occupational Titles. Discrepancies, when the occur, are reconciled. The Job Analyst also prepares a job analysis cover page which overviews the job analysis procedure and specifies the members of the Job Analysis and Reading and Writing Skills Assessment Teams.

Phase six. During this phase, the Job Analyst provides copies of the Preliminary Job Analysis Inventory to members of a three-person Reading Skills Assessment Team and a three-person Writing Skills Assessment Team. Following an overview of the job, the Skills Assessment Team members view a video tape of the work being performed, review the list and samples of reading and writing documents, and approve a preliminary report of reading grade equivalencies and writing levels proposed by the Job Analyst.

Phase seven. In phase seven, Job Analysis Team members provide job task and cognitive ability ratings of frequency and importance. They also review the list of reading and writing documents and mathematics skills required on the job, and link each document and mathematics skill to its corresponding job task.

Phase eight. In phase eight, frequency and importance ratings are averaged and a Final Job Analysis Report is prepared.

Phase nine. Phase nine is the approval phase. During this phase, Job Analysis Team members and a Human Resource representative reviews and approves the final job analysis report.

Testing and Surveys

As previously mentioned, MCC is responsible for administering and interpreting several tests and surveys.

Test administration and feedback. MCC uses the Test of Adult Basic Education (TABE) to assess the reading, writing, and mathematics skills of each Valmont employee. The test is a 4.5 hour examination that consists of seven parts (two reading, two mathematics, two language, and one spelling). Following its administration and scoring, a MCC counselor is assigned to provide test feedback, general academic recommendations, and a plan of job-related remediation. MCC also uses the Wonderlic Personnel Test to provide the Human Resources Department a profile of worker cognitive abilities by job and recommended selection cut-scores.

Survey administration and analysis. MCC uses the Cognitive Abilities section of the Fleishman Job Analysis Survey to assess the cognitive abilities required on the job. The assessment includes ratings, from incumbents and Job Analysis Team members, of the level of each cognitive ability required on the job as well as ratings of importance and frequency. The results are included in the Job Analysis Report. MCC also uses a Multi-Purpose Survey, developed by MCC, to measure the level and strength of employee self-efficacy, job satisfaction, and organizational commitment. The survey is administered three times: prior to taking the TABE, following TABE feedback, and upon completion of training.

Practicum Opportunity

The student will be given the opportunity to observe and conduct a job analysis. Initially, the student will observe all phases of the job analysis procedure (approximately 45 hours). Having observed the procedure, the student will then conduct, with supervision, a complete job analysis. As part of the procedure, the student will also administer the Cognitive Abilities section of the Fleishman Job Analysis Survey, the Wonderlic Personnel Test, and participate in setting selection cut-scores. The practicum is unpaid. The student will also be given the opportunity, when possible, to administer for pay ($12.50 per hour) the Test of Adult Basic Education.

Persons who are interested in the approximately 150 hour practicum should contact Margaret L. Durr, Ph.D. or Vernon A. Peterson, Ph.D. at 359-2201, extension 3128 or 3111, respectively.

APPENDIX E10

Valmont 2000 Training Process

① **JOB ANALYSIS CONDUCTED** →

(18 hours of data collection)

② **TABE TESTING GIVEN TO INDIVIDUAL DEPARTMENTS** →

(5 hours of testing - given during employees current shift)

③ **TABE TEST RESULTS SESSION SCHEDULED WITH EMPLOYEES** →

(35 minute session with Valmont 2000 Counselor - scheduled within 2 weeks of TABE testing.)

④ **TRAINING CLASSES HELD FOR SMALL GROUPS IN BASIC SKILLS NEEDING REVIEW** →

(1 1/2 hours two times per week per class per eight week session.)

⑤ **POST ASSESSMENT (TESTING) OF SKILLS REVIEWED IN TRAINING CLASSES** →

⑥ **EXIT PROGRAM OR RETURN TO STEP 4 IF NEEDED**

THE FUTURE WORKPLACE
VS
WORKPLACE OF THE PAST......

Characteristics of the Past Workplace	Needs of the Future Workplace
Industrialized with Labor Orientation	Information with Service Orientation
"Sweat" with Minimal Education Needed	"High Skilled" with Continual Education (Life Long learning required)
Factory, Shop	Sterile Workplace
Assembly Line Production (Recall)	Problem Solving Essential (Application/Analyze/Synthesize/Evaluate & Judgment)
Repetition or Simple Manual Operations	Flexibility of the employee is essential (Change Oriented)
Top-Down Authority (Do as your told)	Interpersonal Skills Essential (For each employee)
Alone/Work Station	Teamwork Essential
Knowledge of a Machine/Procedure	High Tech Knowledge & Skills Essential

FUTURE WORK SKILLS

21st CENTURY

U.S. Department of
Labor, 1992

FOUNDATION

BASIC SKILLS

- Reads
- Writes
- Performs arithmetic and mathematical operations
- Listens
- Is able to communicate with others.

THINKING SKILLS

- Thinks creatively
- Makes decisions
- Solves problems
- Visualizes
- Knows how to learn
- Can reason

PERSONAL QUALITIES

- Displays responsibility
- Healthy self-esteem
- Is sociable
- Self-management (discipline)
- Has integrity
- Is honest

COMPETENCIES

- Can identify, organize, plan, and allocate resources
- (time, money, material, facilities, people, etc.)
- Exhibits the ability to work with other people
- Can acquire and use information
- Understands complex relationships
- Is able to work with a variety of technology

A THREE PART FOUNDATION

BASIC SKILLS: Reads, writes, performs arithmetic and mathematical operations, listens, and is able to communicate.

A. Reading - locates, understands, and interprets written information in processing documents such as manuals, graphs and schedules

B. Writing - communicates thoughts, ideas, information, and messages in written form and is able to create documents such as letters, directions, manuals, reports, graphs.

C. Arithmetic/Mathematics - performs basic computations and approaches practical problems by choosing appropriately from a variety of mathematical techniques.

D. Listening - receives, attends to, interprets, and responds to verbal messages and other cues.

E. Speaking - organizes ideas and communicates orally.

THINKING SKILLS: Thinks creatively, makes decisions, solves problems, visualizes, knows how to learn and reasons.

A. Creative Thinking - generates new ideas.

B. Decision Making - specifies goals and constraints, generates alternatives, considers risks, and evaluates and chooses bets alternative.

C. Problem Solving - recognizes problems and devises and implements plan of action.

D. Seeing Things in the Mind's Eye - organizes, and processes symbols, pictures, graphs objects and other information.

E. Knowing How to Learn - uses efficient learning techniques to acquire and apply new knowledge of skills.

F. Reasoning - discovers a rule or principle underlying the relationship between two or more objects and applies it in solving a problem.

PERSONAL QUALITIES: Displaces responsibility, self-esteem, sociability, self-management, and integrity and honesty.

A. Responsibility - exerts a high level of effort and perseveres toward goal attainment.

B. Self-esteem - believes in own self-worth and maintains a positive view of self.

C. Sociability - demonstrates understanding, friendliness, adaptability, empathy, and politeness in group settings.

D. Self-Management - assesses self accurately, sets personal goals, monitors progress, and exhibits self-control.

E. Integrity/Honesty - chooses ethical courses of action.

FIVE COMPETENCIES

Resources: Identifies, organizes, plans, and allocates resources

A. Time - Selects goal-relevant activities, ranks them, allocates time, and prepares and follows schedules.
B. Money - Uses or prepares budgets, makes forecasts, keeps records, and makes adjustments to meet objectives.
C. Material and Facilities - Acquires, stores, allocates, and uses materials or space efficiently.
D. Human Resources - Assesses skills and distributes work accordingly, evaluates performance and provides feedback.

Interpersonal: Works with others

A. Participates as a Member of a Team - contributes to group effort.
B. Teaches Others New Skills.
C. Serves Clients/Customers - works to satisfy customers expectations.
D. Exercises Leadership - communicates ideas to justify position persuades and convinces others, responsibly challenges existing procedures and policies.
E. Negotiates - works toward agreements involving exchange of resources, resolves divergent interests.
F. Works with Diversity - works well with men and women from diverse backgrounds.

Information: Acquires and uses information

A. Acquires and evaluates information.
B. Organizes and Maintains information.
C. Interprets and Communicates information.
D. Uses computers to Process information.

Systems: Understand complex inter-relationships

A. Understands systems - knows how social, organizational, and technological systems work and operates effectively with them.
B. Monitors and Corrects Performance - distinguishes trends, predicts impacts on system, operations, diagnoses deviations in systems' performance and corrects malfunctions.
C. Improves or Designs systems - suggests modifications to existing systems and develops new or alternative systems to improve performance.

Technology: Works with a variety of technologies

A. Selects Technology - chooses procedures, tools, or equipment including computers and related technologies
B. Applies Technology to Task - Understand overall intent and proper procedures for setup and operation of equipment.
C. Maintains and Troubleshoots Equipment - Prevents, identifies, or solves problems with equipment, includes computers and other technologies.

APPENDIX E11

RESEARCH STUDY WITH COMMUNITY COLLEGE STUDENTS WITH A LEARNING DISABILITY

Sample Size:	**57 Community College Students with a Learning Disability** **59 Non-Disabled Community College Students**
Resource Institutions:	**Metropolitan Community College** **Southeast Community College**

Demographics:

Race	**56 Whites**	**1 Black**
Age:	**Average = 27.47**	
Gender:	**32 Females**	**25 Males**
Years of Education	**Average = 14.5**	
Highest Education Level Attained:	**Some College**	

RESEARCH WITH LEARNING DISABLED STUDENTS

TITLE: Compliance with the 1990 Americans with Disabilities Act (ADA): The effects of test administration accommodations on the learning disabled and the non-disabled.

PURPOSES:

1) 57 learning disabled and 59 non-disabled students were tested to identify the effect of test administration time accommodations (18-minute time limit and unlimited time) on the scores on a commonly used employment screening device, the Wonderlic Personnel Test.

2) The study also examined which test administration time limits best predicted performance on three clerical job tasks.

RESULTS:

1) The non-disabled students outperformed the learning disabled students on the test when administered with a 12-minute time limit (standard administration time), an 18-minute time limit, and untimed.

2) The non-disabled students outperformed the learning disabled students on the first clerical filing task, but there were no significant differences in their average performance for the second and third filing tasks.

3) The Wonderlic Personnel Test was equally predictive of task performance when a 12-minute time limit was used for the non-disabled students and unlimited time was used for the learning disabled students.

4) Caution should be used when setting cut-off scores on the Wonderlic Personnel Test if it is used for hiring purposes. There were significant differences between the non-disabled and the learning disabled students under all time limits. The non-disabled student's scores were significantly higher overall.

5) When administering the Wonderlic Personnel Test, the person with a learning disability should be given unlimited time while maintaining a standard administration time limit for the non-disabled person.

APPENDIX E12

Part 1

Tests of Adult Basic Education
Forms 5 and 6
Complete Battery

Description

Rationale

overview

The *Tests of Adult Basic Education, Forms 5 and 6* (TABE 5 and 6) are norm-referenced tests designed to measure achievement in reading, mathematics, language, and spelling—the subject areas commonly found in adult basic education curricula. TABE 5 and 6 focuses on basic skills that are required to function in society. Because the tests combine the most useful characteristics of norm-referenced and criterion-referenced tests, they provide information about the relative ranking of examinees against a norm group as well as specific information about the instructional needs of examinees. The tests enable teachers and administrators to diagnose, evaluate, and successfully place examinees in adult education programs. In addition, correlations between TABE scores and scores on the *Tests of General Educational Development* (GED tests) provide a means of estimating scores on the GED tests based on scores obtained on TABE 5 or 6.

The TABE test items reflect language and content that are appropriate for adults and measure the understanding and application of conventions and principles; they are not intended to measure specific knowledge or recall of facts. The items and passages were developed by teachers and content specialists to reflect current content in the basic subject areas. TABE can be used to provide pre-instructional information about an examinee's level of achievement in basic skills, to identify areas of weakness in these skills, to measure growth in the skills after instruction, to involve the examinee in appraisal of his or her learning difficulties, and to assist in preparing an instructional program to meet the examinee's individual needs.

test levels

There are four overlapping levels and two parallel forms, Forms 5 and 6, offered for each level. An additional advanced level that was not in the previous edition of TABE has been added to provide better coverage of material usually taught in high school. This expanded coverage should be especially helpful for examinees who are planning to take the GED tests. The levels and estimated grade ranges are as follows:

LEVEL	RANGE
E (Easy)	2.6 - 4.9
M (Medium)	4.6 - 6.9
D (Difficult)	6.6 - 8.9
A (Advanced)	8.6 - 12.9

Test Content

test structure

Items for TABE 5 and 6 have been written to content categories that reflect educational objectives commonly found in current adult education curriculum guides, published texts, and instructional programs. Brief descriptions of the tests follow.

Complete Battery Test Book

The complete battery test books for Levels E through A contain tests in four basic content areas: Reading, Mathematics, Language, and Spelling. (See Table 1.)

Test 1

Vocabulary. Test 1 contains 30 items that measure same-meaning words, opposite-meaning words, multimeaning words, words in context, and the meaning of affixes.

Test 2

Comprehension. Test 2 contains 40 items that measure comprehension of reading passages. Items test the examinee's ability to extract details, analyze characters, identify main ideas, and interpret events described in passages. Items also test the ability to differentiate between writing techniques and between forms of writing.

Test 3

Mathematics Computation. Test 3 contains 48 items that measure the operations of addition, subtraction, multiplication, and division. Depending on the level of the test, content includes whole numbers, decimals, fractions, integers, algebraic expessions, exponents, and per cents.

Test 4

Mathematics Concepts and Applications. Test 4 contains 40 items that measure understanding of mathematics concepts. Specific skills include numeration, number sentences, number theory, problem solving, measurement, and geometry.

Test 5

Language Mechanics. Test 5 contains 30 items that measure skills in the mechanics of capitalization and punctuation. Editing skills are measured in the context of passages presented in various formats.

Test 6

Language Expression. Test 6 contains 45 items that measure skills in language usage and sentence structure. The items measure skills in the use of various parts of speech, formation and organization of sentences and paragraphs, and writing for clarity. All items in the test are based on rules of written standard English.

Test 7

Spelling. Test 7 contains 30 items that measure applications of spelling rules for consonants, vowels, and various structural forms. Items are presented in the context of sentences with a missing word. The examinee identifies the correct spelling of the word that would complete the sentence.

VALMONT 2000

Dodge County/Fremont Statistical Data

CONFIDENTIALITY STATEMENT

It is vital to the Valmont 2000 project that the results of the TABE be kept confidential. The attached information is not to be discussed or used outside the Fremont 2000 Goal 5 Committee. Any reports using this information must have the expressed written consent of Steve Narans of Valmont Industries.

Characteristics of the Sampling Distribution

1. This sample consists of shop floor/blue collar workers from the Fremont/Dodge County area. Therefore, the reader of this information should be cautioned not to generalize these results to the population at large.

2. The Fremont sample is a subset of the Dodge County sample.

3. It should also be noted that the population sampled is quite small. When the sample is divided into smaller groups based on age, ethnicity, and education, the numbers become even less generalizable to the population due to the limited sample sizes.

4. The reader should also be aware that the data was analyzed by telephone prefix. Some people outside of Fremont are serviced by the 721 and 727 prefix. Dodge County prefixes also extend across county lines in some areas. In summary some of the individuals included in these samples may live in areas bordering Fremont and Dodge County but technically are not members of these areas according to U.S. Census Bureau classification criteria.

Valmont 2000
Dodge County/Fremont Statistical Data

Dodge County
(206 Subjects)

Tabe Score Averages and Grade Equivalencies

	Standard Score Reading	Reading GE	Standard Score Math	Math GE	Standard Score Language	Language GE	Standard Score Total	Total GE
Average Score	793	12.9+	789	10.9	736	9.6	773	11.8
Minimum Score	669	3.5	682	4.2	137	0.0	673	3.7
Maximum Score	831	12.9+	851	12.9+	829	12.9+	830	12.9+

Fremont
(184 Subjects)

Tabe Score Averages and Grade Equivalencies

	Standard Score Reading	Reading GE	Standard Score Math	Math GE	Standard Score Language	Language GE	Standard Score Total	Total GE
Average Score	792	12.9+	789	10.9	734	9.4	773	11.8
Minimum Score	669	3.5	682	4.2	137	0.0	673	3.7
Maximum Score	831	12.9+	851	12.9+	826	12.9+	830	12.9+

KEY POINTS:

1. **The average scores on reading are exceptionally high.**
2. **There is room for improvement in the areas of math and language.**
3. **The minimum score on language reflects a negatively skewed distribution due to the score of one individual being 0.0. The second lowest score had a grade equivalency of 4.0.**
4. **The minimum scores are very low but represent only a few individuals within the distribution sampled.**

Dodge County
(206 Subjects)

Age Breakdown

Tabe Score Averages and Grade Equivalencies

AGE	Number of Subjects	Standard Score Reading	Reading GE	Standard Score Math	Math GE	Standard Score Language	Language GE	Standard Score Total	Total GE
18-22	8	778	11.4	799	12.9+	747	12.0	775	12.6
23-30	56	795	12.9+	792	11.7	741	10.2	776	12.9
31-40	64	799	12.9+	793	12.2	739	10.0	780	12.9+
41-50	56	797	12.9+	788	10.6	738	9.9	774	12.2
51-60	21	766	9.3	766	8.1	700	5.5	744	7.9
61-70	1	773	10.6	760	7.7	745	11.5	759	9.2
TOTAL	206								

KEY POINTS:

1. **Scores for those over age 50 were considerably lower than the scores for the age ranges from 18 to 50 for the total test battery.**
2. **Those in the 18-22 age range had higher math scores but lower reading scores.**

Fremont
(184 Subjects)

Age Breakdown

Tabe Score Averages and Grade Equivalencies

AGE	Number of Subjects	Standard Score Reading	Reading GE	Standard Score Math	Math GE	Standard Score Language	Language GE	Standard Score Total	Total GE
18-22	8	778	10.7	799	12.9+	747	12.0	775	12.6
23-30	52	795	12.9+	791	11.4	742	10.4	776	12.9
31-40	56	798	12.9+	794	12.7	735	9.4	779	12.9+
41-50	48	797	12.9+	788	10.6	737	9.7	774	12.2
51-60	19	764	9.1	767	8.2	698	5.3	743	7.9
61-70	1	773	10.0	760	7.7	745	11.5	759	9.2
TOTAL	184								

KEY POINTS:

1. **Scores for those over age 50 were considerably lower than the scores for the age ranges from 18 to 50 for the total test battery.**
2. **Those in the 18-22 age range had higher math scores but lower reading scores.**

Dodge County
(206 Subjects)

Tabe Score Averages and Grade Equivalencies

Demographics

All Ages

Number of Subjects	Ethnic Background	Standard Score Reading	Reading GE	Standard Score Math	Math GE	Standard Score Language	Language GE	Standard Score Total	Total GE
200	White	793	12.9+	790	11.1	737	7.4	774	12.2
3	Hispanic	748	7.8	714	5.2	647	2.8	703	5.1
3	American Indian	806	12.9+	797	12.9+	755	12.9+	786	12.9+
206									

Number of Subjects	Highest Level of Education	Standard Score Reading	Reading GE	Standard Score Math	Math GE	Standard Score Language	Language GE	Standard Score Total	Total GE
12	Less than High School	748	7.8	751	7.2	691	4.9	730	6.7
108	High School Graduate	790	12.9+	786	10.1	727	8.5	770	11.0
14	GED	790	12.9+	780	9.2	726	9.6	768	10.5
49	Some College	802	12.9+	795	12.9+	752	12.9+	783	12.9+
9	Certificate	819	12.9+	813	12.9+	768	12.9+	800	12.9+
12	Assoc. Degree	806	12.9+	815	12.9+	751	12.9+	791	12.9+
1	Dual Assoc.	810	12.9+	807	12.9+	808	12.9+	808	12.9+
1	Bachelors Degree	831	12.9+	814	12.9+	793	12.9+	813	12.9+
206									

KEY POINTS:

1. **Very little ethnic diversity exists in the sample.**
2. **TABE scores increased with the level of education in all three skill areas.**
3. **Individuals with some college education or more did very well on the TABE.**
4. **The scores for the individuals with a high school education or a GED were about equal.**

Fremont
(184 Subjects)

Tabe Score Averages and Grade Equivalencies

Demographics

All Ages

Number of Subjects	Ethnic Background	Standard Score Reading	Reading GE	Standard Score Math	Math GE	Standard Score Language	Language GE	Standard Score Total	Total GE
178	White	793	12.9+	790	11.1	737	7.4	774	12.2
3	Hispanic	748	7.8	714	5.2	647	2.8	703	5.1
3	American Indian	806	12.9+	797	12.9+	755	12.9+	786	12.9+
184									

Number of Subjects	Highest Level of Education	Standard Score Reading	Reading GE	Standard Score Math	Math GE	Standard Score Language	Language GE	Standard Score Total	Total GE
10	Less Than High School	744	7.4	754	7.4	689	4.8	729	6.6
95	High School Graduate	789	12.9+	785	9.9	724	8.3	768	10.5
14	GED	790	12.9+	780	9.2	736	9.6	768	10.5
44	Some College	802	12.9+	786	10.1	751	12.9+	783	12.9+
9	Certificate	819	12.9+	813	12.9+	768	12.9+	800	12.9+
10	Associate Degree	807	12.9+	815	12.9+	754	12.9+	792	12.9+
1	Dual Associate	810	12.9+	807	12.9+	808	12.9+	808	12..9+
1	Bachelors Degree	831	12.9+	814	12.9+	793	12.9+	813	12.9+
184									

KEY POINTS:

1. **Very little ethnic diversity exists in the sample.**
2. **TABE scores increased with the level of education in all three skill areas.**
3. **Individuals with some college education or more did very well on the TABE.**
4. **The scores for the individuals with a high school education or a GED were about equal.**

APPENDIX E13

WORKPLACE LITERACY IS NOT:

- Technical Training
- Vocational Education
- Adult Basic Education
- Adult Literacy
- Career Related College Courses

BASIC SKILLS APPLICATIONS IN THE WORKPLACE

READING	MATH
–Locating information	–Problem solving to troubleshooting
–Identifying relevant information in manuals or on job aids.	–Estimating results or progress.
–Interpreting schematics and graphs using gauges and symbols.	–Calculating specifications and machine calibrations.
–Following procedural directions using multiple sources of information.	–Computing costs savings.
–Matching alternate criteria to existing conditions.	–Collecting graphing, and analyzing data.

WRITING

–Passing on information.

–Reporting information.

–Responding to requests.

–Making requests.

–Listen to spoke information and write a message.

–Entering information into computer.

–Sending messages via e-mail.

–Taking notes in group meetings.

–Completing forms/applications.

COMMUNICATION

–Asking questions.

–Presenting information to management or coworkers.

–Conducting team meetings.

–Participating on interview teams.

OVERVIEW OF CURRICULUM

The Valmont 2000 workplace learning curriculum allows the employee to apply his/her basic skills; along with a problem-solving strategy, to solve workplace problems. The instructional program utilizes a competency or performance-based approach. Commercial and custom designed materials are used in the classes. A computer-based interactive video program is used to supplement the curriculum.

DESIGN OF THE CURRICULUM

The partnership between Valmont and Metropolitan Community College is further illustrated through the design of curriculum.

Input was solicited from Valmont's Production Managers, Human Resource Representatives from the respective divisions, Shop Supervisors/Leadmen, and Employees.

Three Curriculum Action Teams (CAT) were crated to take advantage of each instructor's strengths to develop course content in Reading, Writing, and Math.

The result of the shared input from Valmont and Metropolitan Community College is following:

1. Course syllabus including a course outline.

2. Pre and Post Tests.

3. Unit Tests

4. Learning Guides (Activity Packets/Work problems)

5. Reference Guides

6. Textbook

7. Availability of computer - assisted instruction.

In addition to the instructors, Teacher Assistants are used to allow employees to receive individualized instruction and guidance in their learning activities.

EVALUATION

1. Employee

Pre-assessments in the respective content area.

Learning Guide check ups.

Unit tests (80% minimum)

Post Assessments

Self-Assessment surveys

- Communication
- Multi purpose

2. Instructor

A 360° performance evaluation concept was developed to assist instructors in their professional growth. This format involves feedback from the following people:

1. Valmont 2000 class participants.

2. Teacher Assistants

3. Fellow Instructors (Peer Evaluations)

4. Instructors - Self evaluations

5. Supervisors

Direct observation and video taping are used. The instructors are evaluated during each session they teach.

3. Company wide evaluation measures

    Production
    Quality
    Scrap-rate
    Safety
    Use of Tuition Reimbursement

APPENDIX F1

DATE: January 11, 1993

TO: Valmont 2000 Project Team

FROM: Pat Halverson PH

RE: 1st external evaluation report

I truly enjoyed meeting with you and look forward to my next visits. I congratulate you on an exciting and ambitious project design. I appreciated the opportunity to orient myself to the Valmont 2000 project and to the company. Considerable progress has been made toward meeting the project objectives. The attached Valmont 2000 report will address each objective individually.

There are several specific things related to project objectives which I'd like to see or discuss on my next visit:

Objective 1:
- A. Advisory team activities & participants
- B. Marketing plan

Objective 2:
- A. Recruitment plan and sample recruitment materials
- B. Progress toward goal of 350 participants
- C. Skill development activities

Objective 3:
- A. Incorporation of job analysis information into skill development activities

Objective 4:
- A. Number of Valmont employees assessed
- B. Number of I.E.P.s developed
- C. Process for developing I.E.P.s

Objective 5:
- A. Progress on curriculum development
- B. Syllabi of courses
- C. Description of process used to develop curricula
- D. Orientation video

Objective 6:
- A. Instructional resources & equipment in Development Center

Objective 7:
  A. Progress on mentoring program

Objective 8:
  A. Progress on tutoring program

Objective 9:
  A. Optional delivery systems

Objective 10:
  A. Samples of tracking information and participant progress

Objective 11:
  A. Evaluation activities

Please call me at 515-964-6821 to arrange a time for the next visit.

Attachments

Valmont 2000

Objective 1: To provide, through August 1994, an effective plan of management to ensure the proper and efficient management of the Valmont 2000 Program.

> Project staff are exceptionally well qualified and knowledgeable. Advisory Team is in place. There appears to be good support from Valmont Industries managers. Continued attention to internal marketing is critical with a focus on reducing employee resistance.

Objective 2: To recruit and enroll through the 18 month project period, 350 participants and to provide 100% of the participants workplace skills development activities and services to ensure attainment of literacy and other workplace basic skills essential to successful placement, continued employment, advancement in careers, and increased productivity.

> The process for recruiting and testing participants is in place. Some participants expressed some confusion about purpose and goals of the writing class and did not appear to make a connection between testing, the class and the work place. I suggest taking a second look at the process for orienting participants and developing I.E.P.s with a goal of improving participant understanding of personal benefits and reducing resistance (see attachment A).

Objective 3: Conduct job task/literacy analysis for 25 job titles in 12 job groups to determine needed basic skills training/needed curriculum adjustments per designated job task area in ongoing process through August 1994.

> The job task/literacy analysis process is on track and is very thorough with good employees involvement. The process should produce excellent information for designing job specific curricula (see attachment B).

Objective 4: Design and implement, through August 1994, individualized learning plans for 100% of Valmont employees with identified deficits to bridge the gaps found between skills of employees and on-the-job requirements.

> IEPs are designed and in initial stages of implementation. Staff needs to focus attention on involving employees in developing plan. There appears to be good supervisor support for employee involvement (see attachment C).

Objective 5: To develop and provide, through August 1994, performance based workplace specific skills training curriculum based upon job task analysis and cooperatively planned by Valmont employees and Valmont 2000 Project.

> Curricula development is in first stages with the first course, Writing in the Workplace is underway. Alternative delivery systems are available and a tracking system is in place (see attachment D).

Objective 6: To provide, through August 1994, Valmont 2000 instructional support services and activities through the Valmont Development Center for 350 of Valmont 2000 participants.

> Staff has begun to compile a resource library and equipment for the Developmental Center. The assessment, counseling and referral services are in place and training classes are underway. No tutoring or mentoring services are available at this time.

Objective 7: Develop and implement, through August 1994, Valmont 2000 mentoring program to assist new and/or current employees requesting mentors acquire essential basic or technical skills needed to start a new job or to learn a new technique or technology on the job.

> No progress on this objective. You may want to consider doing workshops for identified mentors on teaching a new employee how to do the job.

Objective 8: To provide, through August 1994, a Valmont 2000 tutorial program to assist employees with special learning needs successfully achieve literacy goals.

> No progress at this time.

Objective 9: To provide, through August 1994, Valmont 2000 optional delivery systems for workplace skills development curriculum, workshops, and seminars via distance learning technology including satellite down-link nationally/internationally, telecourse instruction, and computer assisted/interactive video learning systems.

> No progress at this time.

Objective 10: To provide, through August 1994, mechanisms for continually monitoring participants' performance and maintaining Project files, data and reports.

> Tracking system in place and record keeping and progress reporting systems established (see attachment E).

Objective 11: To evaluate, through August 1994, the progress of the Valmont 2000 program through the use of evaluation measures that assess the degree to which the Project objectives have met the criteria.

> Data collection and the evaluation process are under way.

Summary

The Valmont 2000 project is clearly on track for successful completion. The project is well-managed and is cooperative in nature. Most implementation strategies are well underway. Staff will need to address objectives 7, 8 and 9 in the near future.

Memorandum

Des Moines Area Community College

DATE: February 15, 1994

TO: Valmont 2000 team

FROM: Pat Halverson PH

RE: February visit

Thank you for your hospitality. It was very exciting to see the remarkable progress you have made since my last visit. I congratulate you on a truly exemplary project. A special thanks to the instructors who allowed me to visit their classes. That experience made clear to me that the project is succeeding. The initial resistance from participants which was expressed at my first visit was no longer evident. Everyone involved in training was engaged in very positive ways. Ken Jones and the other instructors should take a minute to pat themselves on the back for a job well done. The attached report details progress to date.

Please consider this the invoice for my visits in August 1993 and February 1994. I traveled 332 miles each time.

Attachment

Valmont 2000

Objective 1: To provide through August 1994, an effective plan of management to ensure the proper and efficient management of the Valmont 2000 Program.

This project is very well managed. Action teams are in place to work on project objectives. There continues to be good support from Valmont Industries. Efforts to market the program appear to be very successful. (Attachment A)

Objective 2: To recruit and enroll through the 18 month project period, 350 participants and to provide 100% of the participants workplace skills development activities and services to ensure attainment of literacy and other workplace basic skills essential to successful placement, continued employment, advancement in careers, and increased productivity.

Recruitment efforts have been successful. Three hundred fifty seven (357) individuals have been tested, three hundred ten (310) have received counseling and two hundred thirty three (233) have attended classes to date. (Attachment B)

Objective 3: Conduct job task/literacy analysis for 25 job titles in 12 job groups to determine needed basic skills training/needed curriculum adjustments per designated job task area in ongoing process through August 1994.

Twenty job analyses are complete or in final review process at present. The attached timeline (Attachment C) shows the plan for completion of this objective.

Objective 4: Design and implement, through August 1994, individualized learning plans for 100% of Valmont employees with identified deficits to bridge the gaps found between skills of employees and on-the-job requirements.

Testing and counseling sessions are well underway (see attachment A). Supervisors are involved in scheduling process to ensure minimal disruption to production. Training is scheduled for all shifts.

Objective 5: To develop and provide, through August 1994, performance based workplace specific skills training curriculum based upon job task analysis and cooperatively planned by Valmont employees and Valmont 2000 Project.

The team is using a very dynamic and responsive system for curriculum development which includes using materials from job analysis and using work problems identified by supervisors and participants.

Objective 10: To provide, through August 1994, mechanisms for continually monitoring participants' performance and maintaining Project files, data and reports.

The project team is using MCC's computerized tracking system. Data is entered, and analyzed using SPSSX.

Objective 11: To evaluate, through August 1994, the progress of the Valmont 2000 program through the use of evaluation measures that assess the degree to which the Project objectives have met the criteria.

The Evaluation Action Team surveyed other companies to determine if current evaluation measures were complete. They found that Valmont 2000 evaluation measures were more inclusive than most others. Evaluations focused on student measures include: 1) pre and post testing with TABE, 2) in-class pre and post assessments, 3) instructor evaluation of students, 4) communications skills survey for students, 5) Multi-purpose Survey for students which is administered three times. Company wide evaluation measures will look at such things as 1) production, 2) quality, 3) scrap-rates, 4) safety, 5) use of tuition reimbursement program.

DMACC
DES MOINES AREA
COMMUNITY COLLEGE

MEMORANDUM

DATE: June 7, 1994

TO: Valmont 2000 Team

FROM: Pat Halverson PH

RE: May visit

As always my visit to the Valmont 2000 project was exciting and energizing. I continue to be impressed with the quality of personnel involved in making this project work. It is clear that all goals will be met or exceeded before the August completion date. I wish you success in securing funding to continue your efforts. If I can be of any assistance, let me know.

Please consider this the invoice for my visit. I traveled 332 miles.

BEST COPY AVAILABLE

Ankeny Campus
2006 S. Ankeny Boulevard
Ankeny, Iowa 50021
515-964-6200

Boone Campus
1125 Hancock Drive
Boone, Iowa 50036
515-432-7203

Carroll Campus
906 N. Grant Road
Carroll, Iowa 51401
712-792-1755

Newton Polytechnic
600 N. 2nd Avenue W.
Newton, Iowa 50208
515-[illegible]

Urban Campus
1100 7th Street
Des Moines, Iowa 50314
515-[illegible]

Valmont 2000

Objective 1: To provide through August 1994, an effective plan of management to ensure the proper and efficient management of the Valmont 2000 Program.

Dr. Margaret Durr has done an outstanding job of managing this project. The methods she has used to build teams and complete objectives should be one of the points of interest when disseminating information about this project.

Objective 2: To recruit and enroll through the 18 month project period, 350 participants and to provide 100% of the participants workplace skills development activities and services to ensure attainment of literacy and other workplace basic skills essential to successful placement, continued employment, advancement in careers, and increased productivity.

TABE tests and counseling sessions have been completed for 357 individuals. Enrollment in classes has also exceeded the goal of 350 for the grant period. Class enrollment by session is:

Session	Participants
Pilot	9
One	86
Two	140
Three	47
Four	153
Total	435

A fifth session is planned for July and August with a projected enrollment of 200 participants.

Objective 3: Conduct job task/literacy analysis for 25 job titles in 12 job groups to determine needed basic skills training/needed curriculum adjustments per designated job task area in ongoing process through August 1994.

Job Analyses have been completed for twenty-five jobs. The objective has been met.

Objective 4: Design and implement, through August 1994, individualized learning plans for 100% of Valmont employees with identified deficits to bridge the gaps found between skills of employees and on-the-job requirements.

Job Analyses, TABE testing and TABE results sessions have been completed for the employees in the twenty-five jobs identified by this project.

Objective 5 To develop and provide, through August 1994, performance based workplace specific skills training curriculum based upon job task analysis and cooperatively planned by Valmont employees and Valmont 2000 Project.

Curriculum Action Teams have met to organize curriculum materials for each subject area with a goal of providing consistency in classes and across shifts. Teams visited departments to observe and validate curricula. Teams are moving to more self-paced and individualized programming (see Attachment A). The Orientation video is complete. The video clearly demonstrates the commitment of company management to this project (Attachment B).

Objective 6 To provide, through August 1994, Valmont 2000 instructional support services and activities through the Valmont Development Center for 350 of Valmont 2000 participants.

Instructional resources, equipment and support services are in place. Courses and workshops are scheduled for various shifts and testing and support for participants with learning disabilities are available through Metropolitan Community College.

Objective 7: Develop and implement, through August 1994, Valmont 2000 mentoring program to assist new and/or current employees requesting mentors acquire essential basic or technical skills needed to start a new job or to learn a new technique or technology on the job.

The mentoring program showed great progress since the last visit. A handbook for mentors has been developed and distributed to Valmont 2000 staff, supervisors and mentors. Mentors from seven departments have been identified and trained. Training evaluations were completed with very positive responses. Follow-up sessions with mentors are planned to evaluate progress and identify additional needs (see Attachment C).

Objective 8: To provide through August 1994, a Valmont 2000 tutorial program to assist employees with special learning needs successfully achieve literacy goals.

Teacher assistants have been hired and recruitment efforts are ongoing. Teacher assistant orientation packets and handbooks have been developed.

Objective 9: To provide, through August 1994, Valmont 2000 optional delivery systems for workplace skills development curriculum, workshops, and seminars via distance learning technology including satellite down-link nationally/internationally, telecourse instruction, and computer assisted/interactive video learning systems.

The Distance Learning Action Team has met to identify the feasibility of integrating distance learning into the curriculum. Currently, participants are not at adequate educational levels to profit from distance learning classes. An analysis of the costs of integrating distance learning at the Valmont site determined that Valmont would save considerable money by using existing Metropolitan Community College facilities for participants who are prepared for that level of educational program (see Attachment D).

Objective 10: To provide, through August 1994, mechanisms for continually monitoring participants' performance and maintaining Project files, data and reports.

Activity on this objective is ongoing using MCC's computerized tracking system.

Objective 11: To evaluate, through August 1994, the progress of the Valmont 2000 program through the use of evaluation measures that assess the degree to which the Project objectives have met the criteria.

In addition to evaluation activities described in previous reports, Project Instructor and teacher assistant evaluations will be conducted which include peer, supervisor and student input. Video tapes of instructors are used on an ongoing basis to improve the instructional process.

Valmont 2000

Objective 1: To provide through August 1994, an effective plan of management to ensure the proper and efficient management of the Valmont 2000 Program.

This project has been exceptionally well managed from beginning to end. The management strategies used by Dr. Margret Durr and Dr. Ken Jones have been very effective and should be a significant part of the lessons to be shared from this project. Metropolitan Community College and Valmont Industries have contributed extensive support and expertise to the management of the project. This has been a truly successful team effort. See attachment A

Objective 2: To recruit and enroll through the 18 month project period, 350 participants and to provide 100% of the participants workplace skills development activities and services to ensure attainment of literacy and other workplace basic skills essential to successful placement, continued employment, advancement in careers, and increased productivity.

This goal was met or exceeded. See attachment B

Objective 3: Conduct job task/literacy analysis for 25 job titles in 12 job groups to determine needed basic skills training/needed curriculum adjustments per designated job task area in ongoing process through August 1994.

This goal was met or exceeded. See attachment C

Objective 4: Design and implement, through August 1994, individualized learning plans for 100% of Valmont employees with identified deficits to bridge the gaps found between skills of employees and on-the-job requirements.

This goal was met. (See attachment D) Basic skills training was scheduled for all shifts.

Objective 5: To develop and provide, through August 1994, performance based workplace specific skills training curriculum based upon job task analysis and cooperatively planned by Valmont employees and Valmont 2000 Project.

The curriculum development process used by this Curriculum Action Teams is a model for continuous improvement efforts. The attached Learning Guides (attachment E) are representative of materials used in basic skills instruction. The objective was met.

Objective 6: To provide, through August 1994, Valmont 2000 instructional support services and activities through the Valmont Development Center for 350 of Valmont 2000 participants.

Instructional resources, equipment and support services are in place. Support for participants with learning disabilities was outstanding. This objective was met.

Objective 7: Develop and implement, through August 1994, Valmont 2000 mentoring program to assist new and/or current employees requesting mentors acquire essential basic or technical skills needed to start a new job or to learn a new technique or technology on the job.

This objective was met. The mentors handbook and training sessions are well-designed and based on evaluations well-received. See attachment F

Objective 8: To provide through August 1994, a Valmont 2000 tutorial program to assist employees with special learning needs successfully achieve literacy goals.

The teacher assistant program is in place and based on observation a valuable support for participants who need extra attention or need to be brought up to speed due to absences. This objective was met. See attachment G

Objective 9: To provide, through August 1994, Valmont 2000 optional delive systems for workplace skills development curriculum, workshops, and seminars via distance learning technology including satellite down-link nationally/internationally, telecourse instruction, and computer assisted/interactive video learning systems.

While this objective was not implemented, the team completed an analysis of the costs of integrating distance learning at the Valmont site. It was determined that current participants were not at adequate educational levels to profit from distance learning classes currently available.

Objective 10: To provide, through August 1994, mechanisms for continually monitoring participants' performance and maintaining Project files, data and reports.

This objective was met.

Objective 11: To evaluate, through August 1994, the progress of the Valmont 2000 program through the use of evaluation measures that assess the degree to which the Project objectives have met the criteria.

Evaluation measures were comprehensive and results are impressive. The participant gain information is of particular interest in demonstrating the effectiveness of the project. See attachment H

APPENDIX F2

Job Analysis Procedure

Step 1: **Preliminary Administrative Work**

A Job Analysis Team will be developed. The team shall consist of 4 persons: a manager who is familiar with the job being analyzed, immediate supervisor, and two persons who perform the job regularly. The Job Analysis Team will be responsible for scheduling job-site visits and interviews, reviewing the job analysis product, providing job task and cognitive ability ratings, and approving the final job analysis report.

Step 2: **Job-Site Visits**

The Job Analyst will conduct work-site visits to observe and video tape the job as it is performed. Typically, three site visits will be conducted: one visit lasting two hours for each shift.

Step 3: **Interviews**

At the onset of each interview, incumbents will be asked to complete the Cognitive Abilities Section of the Fleishman Job Analysis Survey, and a cognitive ability measure. The Job Analyst will then interview Job Knowledge Experts who, preferably, are not members of the Job Analysis Team. Typically, the Job Analyst will interview two Job Knowledge Experts at one time. The interviews will utilize a structured format with a modified version of the PAQ in addition to forms developed by MCC in order to determine the job tasks performed by incumbents.

Step 4: **Preliminary Job Analysis Inventory**

A preliminary job analysis inventory will be developed to include a listing of job tasks, reading, writing, and math tasks, and other cognitive abilities.

Step 5: **Task Match and Reconciliation**

The Job Analyst will compare the preliminary job analysis inventory to its corresponding job description, available job procedure information, and Department of Labor DOT job descriptions. Discrepancies will be reconciled by the Job Analysis Team.

Step 6: **Skills Assessment**

All job relevant reading and writing samples will be collected for analysis.[1] Readability will be calculated using the RIGHTWRITER program which implements the Flesch-Kincaid formula to calculate the Readability index. A range of acceptable reading competencies are developed from the average of all reading samples. Writing standards are developed via review of the Writing samples and the amount of discourse required by each.

Step 7: **Integration**

The reading grade equivalencies and writing levels, based upon the reading and writing samples, will be added to the job analysis.

Step 8: **Rating Procedure**

Job Analysis Team members will independently provide job task and cognitive ability ratings of frequency and importance. Detailed attention will be given to the areas of reading, writing, and mathematics to determine the reading, writing, and math tasks performed as part of the job and their linkage to job tasks.[2]

Step 9: **Final Report**

The Job Analyst will calculate a mean frequency and importance rating for each task and cognitive ability. A report title page will be developed to include report date, job tittle, work summary, an overview of the job analysis procedure, name of Job Analyst and members of the Job Analysis team, as well as a detailed description of the data collection processes (date and time of site visits, names of site contact, and interviewees).

Step 10: **Skill Assessment Team**

Skill Assessment Team members will review the final report. Team members will also view the video tape of job performance recorded during the job site visits (Step 2). Finally, the Skill Assessment Team will review all reading and writing samples and approve the final report.

Step 11: **Approval of Final Report**

Job Analysis Team members, members of the Reading and Writing Skills Assessment Teams, and a Human Resource Representative will review and approve the Final Report.

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[1] Note. Reading grade equivalencies and writing levels based on the Scale of General Education Development (GED), as assessed by the Reading and Writing Skills Assessment Teams, will be validated by a comparison with the Cognitive Abilities Section of the Fleishman Job Analysis Survey, Dictionary of Occupational Titles (DOT) codes, math, writing, and reading skills determined by the Job Analyst, and Subject Matter Experts at Metropolitan Community College.

[2] Note. Reading grade equivalencies and writing levels based on the Scale of General Education Development (GED) will be determined by the Reading and Writing Assessment Teams at a later point in time.

APPENDIX F3

PROPOSED JOB ANALYSIS TIME LINE

Pre-Job Analysis Administrative Tasks

Number	Activity	Status	Estimated Completion
1	Establish a standardized job-analysis procedure.	Complete	June 1993
2	Develop a job-analysis flow chart which summarizes standardized job-analysis procedure.	Complete	June 1993
3	Develop a sample job-analysis product.	Complete	June 1993
4	Present an overview of the standardized job-analysis procedure, flow chart, and sample product to Human Resources Department representatives for their approval and modify if required.	Complete	July 1993
5	Develop a job-analysis interview guide and job-analysis scheduling form.	Complete	July 1993
6	Select and order a survey and test of cognitive abilities	Complete	July 1993
7	Develop rating scales to assess the frequency and importance of job tasks.	Complete	July 1993

Review Phase I Data Transmittal Sheets and Revise as Necessary

Number	Activity	Status	Estimated Completion
8	Shipper B-Stager, Loader, Outside (2891)	Complete	May, 1994
9	Shipper B-Inside Packer (2891)	Complete	May, 1994
10	Submerged Arc Base Welder (2151)	Complete	May, 1994
11	Material Handler (1010)	Complete	May, 1994

·Review Phase I Data Transmittal Sheets and Revise as Necessary (Continued)

Number	Activity	Status	Estimated Completion
12	Welder B (1020)	Complete	May, 1994
13	Galvanizing Acid Reclamation Operator B (1100)	Complete	May, 1994
14	Retread Machine Operator B (1170)	Complete	May, 1994
15	Small Diameter Mill Operator (2141)	Complete	May, 1994
16	Small Diameter Mill Trainee B (2141)	Complete	May, 1994
17	Cut-Off Operator (1100)	Complete	May, 1994
18	Small Diameter Mill Team Leader (2141)	Complete	May, 1994
19	Paint Associate (2064)	Complete	May, 1994
20	Machine Operator (1100)	Complete	May, 1994
21	Galvanizing Crew Leader (1100)	Complete	May, 1994
22	Welder C - Irrigation (1020)	Complete	May, 1994
23	Galvanizing Acid Reclamation Operator A (1100)	Complete	May, 1994
24	Galvanizing Bridge Crane Operator (1100)	Complete	May, 1994
25	Forklift Operator (1020)	Complete	May, 1994
26	Set-Up Technician (1100)	Complete	May, 1994
27	Small Diameter Mill Operator Assistant(2141)	Complete	May, 1994
28	Welder B (2151, 2062, 2063)	Complete	May, 1994

Phase II Job Analyses

Number	Job Analysis	Status	Estimated Completion
31	Slitter Machine Operator Leadman (2085)	Complete	September 1993
32	Slitter Machine Operator (2085)	Complete	September 1993
33	Slitter Machine Operator Trainee A (2085)	Complete	September 1993
34	Slitter Machine Operator Trainee B (2085)	Complete	September 1993
35	Big Wheel Operator (1050)	Complete	September 1993
36	Gearbox Machine Operator (1050)	Complete	September 1993
37	Gearbox Machinist A (1050)	Complete	October 1993
38	Gearbox Assembler A (1050)	Complete	October 1993
39	Gearbox Assembler Trainee A (1050)	Complete	October 1993
40	Gearbox Assembler B (1050)	Complete	October 1993
41	Electrical Assembly Technician (1070)	Complete	December 1993
42	Electrical Assember A (1070)	Complete	December 1993
43	Electrical Assembler B (1070)	Complete	December 1993
44	Brake Press Operator (2151)	Complete	January 1994
45	Brake Press Helper (2151)	Complete	January 1994
46	Shear Operator (1010)	Complete	January 1994
47	Brake Press Operator (1010)	Complete	January 1994
48	CNC Angle Process Operator (1010)	Complete	January 1994
49	CNC Brake Press Operator 1010)	Complete	January 1994
50	Tapered Tube Former (2062)	Complete	January 1994

Phase II Job Analyses (Continued)

Number	Job Analysis	Status	Estimated Completion
51	Custom Fitter (2151)	Complete	April 1994
52	Shipper A Outside (1212, 1213)	Complete	April 1994
53	Shipper B Outside (1212, 1213)	Complete	April 1994
54	Welder C (2151, 2062, 2063, 2061)	Complete	May 1994
55	Maintainer B and C (2852, 2084)	Complete	May 1994

APPENDIX F4

VALMONT MINIMUM BASIC SKILLS STANDARDS

READING LIST

- ASTM Standards (GE= 10.0)
- Company Memos/postings (benefit information, news releases, meeting notices, department request, etc.) (GE= 8.8)
- Company newsletter (GE=10.60)
- Employment Law Postings (GE= 9.0)
- Information related to Project Impact (GE= 9.3)
- Instructions about proper lifting (GE=4.77)
- Job Postings (GE= 3.4)
- Machine/Equipment Operating Instructions (GE= 5.9)
- Manufacturing Specification Standards Book (GE= 9.5)
- Material Safety Data Sheets (MSDS) (GE= 10.66)
- Product Warning Labels (GE= 10.0)
- Reject Tag Completion Instruction Poster (GE=7.3)
- Safety Brochure/gram (GE= 8.0)
- Safety Inspection Checklist(GE= 10.46)
- Safety Meeting Minutes (GE=8.52)
- Task Analysis Worksheets (GE= 5.6)
- Safety Mission Statement (GE= 8.3)

OVERALL G.E. 8.24

WRITING LIST

- Accident Reports (sentences/paragraph)
- E-Mail Messages (sentences/paragraph)
- Hazard Reports (sentences/paragraph)
- Incident Reports (sentences/paragraph)
- Move Tags (words, phrases)
- Notes to Other Shifts (sentences/paragraphs)
- Project IMPACT related writing (sentences/paragraphs)
- Reject Tags (phrases,sentences)
- Shipping Instructions (words, phrases)
- Task Analysis Worksheets (words, phrases)

None of the items on this list exceed writing at paragraph level as a means of conveying information (expository prose). This includes the ability to punctuate properly, write compound and complex sentences, and use adverbs and adjectives. GED level 2.

MATH LIST

- Add whole numbers, fractions, and decimals.
- Subtract whole numbers, fractions, and decimals.
- Multiply whole numbers and decimals.
- Divide whole numbers and decimals.
- Measure in whole numbers, fractions, and decimals (English system).
- Round off decimals.
- Calculate percentages.
- Read bar, circle and line graphs.
- Use four function and memory calculator.
- Read and derive measurements from blueprints.

Math is not based on a grade level although these activities would fall between the 6th and 8th grade range.

APPENDIX F5

Date: Classes Started

Date Classes End:

Instructors Name:

Classes Location: Valmont 2000
Classroom
Bldg. 519

Telephone: 359-3157

READING IN THE WORKPLACE

WELCOME TO VALMONT 2000

**A educational partnership
between Metropolitan
Community College and
Valmont Industries, Inc.**

Course Description:

This course is designed to prepare you to deal more effectively with on-the-job reading requirements using a problem-solving strategy. General topics of study include reading memos, forms, charts, graphs, tables, and reference materials, using selected vocabulary and comprehension skills.

Course Objectives:

Upon completion of Reading in the Workplace, the student will be able to demonstrate competency in reading a variety of materials, using the following skills:

1. Problem-solving
2. SQ3R (A study-reading technique)
3. Finding information
4. Following directions
5. Verifying information
6. Drawing conclusions
7. Identifying main ideas
8. Building vocabulary
    a. Work-specific words
    b. Words often confused
    c. Context clues
    d. Word parts

Methods of Instruction:

Instructor: Class lectures and demonstration will be used to explain reading concepts. Audio visual material and the interactive video system will supplement class activities.

Methods of Learning:

Student: Students will be expected to participate in all lectures, demonstrations, and assignments and are responsible for all assignments and materials covered in class. Attendance is mandatory.

Required Materials:

All learning materials and supplies will be furnished.

Evaluation:

1. Criteria for achieving mastery on all units and tests is 80%.
2. All students will evaluate the instructor and the course.

READING SYLLABUS ASSIGNMENTS

Week 1		
	Day 1	Introduction Registration Form Communication Survey Icebreaker Pre-Assessment
	Day 2	Explain Pre-Assessment Results Intro to text Dictionary Handout (2 pages) Dictionary Worksheet Previewing Activity
Week 2		
	Day 1	Previewing Review Activity (optional) Text (p. XII) Problem Solving Strategies Problem Solving Activity Text (pp. 3, 11, 89, 96, 263, 271) Memos SQ3R Activity
	Day 2	Memo Review Mogen Bay Memo (overhead) Mogens Bay article and work problems Main Idea Guide (pp. 43-44) Topics Vocabulary Guide (pp. 1-2) Context Comprehension Passage Drills1-2
Week 3		
	Day 1	E-Mail Training (Make appointment with Pat Fiedler by Week #1)
	Day 2	E-Mail review Work Problem (may also be done Week 4- Day 1) Main Idea Guide (pp. 45-48) Comprehension Passage Drills 3-4 Vocabulary Guide Roots (pp. 3-6) Memo Review - Spill Response (optional)
Week 4		
	Day 1	Text (pp. 29, 115) Forms W4 Form Work Problem Main Idea Practice (pp. 2-5) Vocabulary Guide (pp. 7-10) Prefixes Spill Response Forms - Work Problems

	Day 2	Text (pp. 206 - 207, 284 - 285) Forms (overhead) Main Idea Practice (pp. 6-10) Review and Midterm
Week 5		
	Day 1	Form Review - Safety Inspection Checklist Work Problems Topics, Main Idea Review - Work Problems Text (pp. 41-43, 50-51, 53) Charts and Tables Following Directions Guide
	Day 2	Text (pp. 129, 135-136) Charts and Tables Charts, Graphs, Tables Guide EPIC System Work Problems Comprehension Passage Drills 5 -6 Vocabulary Guide (pp. 11-13) Suffixes and Word Part Exercises
Week 6		
	Day 1	Text (pp. 219, 225, 310, 313) Charts and Tables Valmont Productivity Chart Activity Locating Details Guide Comprehension Passage Drills 7-8
	Day 2	Vocabulary Guide (p. 14) Dictionary Impact Booklet Work Problems Lockout/Tagout Work Problems Individualized Review (Optional)
Week 7		
	Day 1	Comprehension Passage Drills 9-10 Vocabulary Guide (pp. 15-16) Connotations, Thesaurus Drawing Conclusions Guide
	Day 2	Vocabulary Guide (pp. 17-18) Synonyms, Antonyms Critical Reading Guide Annual Evaluation Work Problems Review (use corrected Pre-Assessments)
Week 8		
	Day 1	Course Evaluation Communication Survey (post) Multipurpose Survey (yellow) Post-Assessment
	Day 2	TABE

COURSE DESCRIPTION FOR
BASIC READING SKILLS

Objectives:

To teach, reinforce, and/or practice basic reading skills in the following areas:

1. Sight Words
2. Phonics
3. Structural Analysis
4. Comprehension

Methods of Instruction:

Instructor: Class lectures and demonstrations will be used to explain reading skills. Audio visual material will supplement class activities, and individualized instruction will be offered as needed.

Methods of Learning:

Student: All students will be expected to participate in class activities. Homework is optional, but strongly encouraged.

Date: Classes Started

Date Classes End:

Instructors Name:

Classes Location:

Telephone:

WRITING IN THE WORKPLACE

WELCOME TO VALMONT 2000

A partnership between Metropolitan Community College and Valmont Industries, Inc.

Course Description:

This course enables students, using a problem solving strategy, to write clear and appropriate work-related messages and provide a good foundation for writing other business documents, proposals and correspondence.

Prerequisites:

None.

Course Objectives:

Upon completion of Writing in the Workplace, the student will be able to:

1. Use a problem-solving strategy to improve his/her writing.
2. Correctly use basic language and proof reading skills in their writing.
3. Record written information accurately and completely on Valmont developed forms.
4. Pass on written information accurately and completely to co-workers, supervisors, and others.
5. Requests information and services from co-workers, supervisors, and others.
6. Responds to questions and requests through clear written communication.
7. Uses the Interactive Video System to practice basic language skills.
8. Uses the Completing Forms Strategy to complete all types of forms.
9. Apply basic E-mail techniques.

Methods of Instruction:

Instructor: Class lectures and demonstration will be used to explain writing concepts. Audio visual material will supplement class activities.

Methods of Learning:

Student - Students will be expected to participate in all lectures, demonstrations, and assignments. Homework is optional. All students are totally and completely responsible for all assignments and materials covered in class.

Required Materials:

1. Learning Guides
2. Supplies will be furnished.

Evaluation:

1. Criteria for achieving mastery on all units and tests is 80%.
2. All students will evaluate the instructor.

Attendance is Mandatory.

Suggested Course Outline: Writing

Week #1 Day 1	Introduction, Registration forms, Pre-Communication Survey, Informal Proofreading Assessment I Ice Breaker
Day 2	Review Pre-Assessment Results, Essay Assessment Pre-test
Week #2 Day 1	Explain Proofreading guide/worksheets Intro. to Text v-xiv Understanding Sentence Structure Learning Guide
Day 2	Review Complete Sentences Learning Guide Subject/Verb Agreement Learning Guide
Week #3 Day 1	Subject/Verb Agreement (continued) Pronouns Learning Guide
Day 2	Joining Words Learning Guide Writing Informal Messages Learning Guide Text Lesson 6 Skills Practice pg. 89-92 and pg. 165 - 167
Week #4 Day 1	Homonyms Learning Guide Text pg. 47-49, 63-65, and 272 - 273
Day 2	Learning Guide Completion or E-Mail Training

Week #5 Day 1	E-Mail Training or Learning Guide Completion
Day 2	Review and Midterm
Week #6 Day 1	Paragraph Development Learning Guide Impact Form
Day 2	Apostrophes Learning Guide Valmont forms
Week #7 Day 1	Commas Learning Guide Text pg 182, and pg 197-198, pg 213-217 Formal Letters pg. 213-217
Day 2	Essay Post Assessment Capitalization Learning Guide
Week #8 Day 1	Proofreading Assessment II Communication Survey MCC Student Evaluation of Instructor Yellow Multipurpose Survey
Day 2	Review Proofreading Assessment II results TABE Test

Appropriate timeline for completion depends on individual needs and performance.

Text - Writing for Workplace Success

Date: Classes Started

Date Classes End:

Instructors Name:

Classes Location:

Telephone:

MATH IN THE WORKPLACE

WELCOME TO
VALMONT 2000

A partnership between
Metropolitan Community
College and Valmont
Industries, Inc.

COURSE DESCRIPTION:

This course is designed to prepare you to deal more effectively with math requirements on the job. General topics of study include: adding, subtracting, multiplying, and dividing whole numbers, decimals, and fractions, finding amounts, expressing relationships, verifying numbers, and analyzing and interpreting information.

COURSE OBJECTIVES:

Upon completion of Math in the Workplace, the student will be able to:

1. Solve work-related with problems using problem-solving strategies.

2. Solve basic math problems.

3. Solve work-related problems expressing relationships (fractions, ratios, percents, measurements).

4. Verify numerical information presented on graphs and tables.

5. Analyzes and interprets numerical information.

Methods of Instruction:

Instructor: Class lectures and demonstration will be used to explain math concepts. Audio visual material in the interactive video system will supplement class activities.

Methods of Learning:

Student: Students will be expected to participate in all lectures, demonstrations, and assignments, and are responsible for all assignments and materials covered in class. Attendance is mandatory.

Required Materials:

All learning materials and supplies will be furnished.

Evaluation:

1. Criteria for achieving mastery on all units and tests is 80%.
2. All students will evaluate the instructor and the course.

COURSE OUTLINE

WEEK 1:

DAY 1: Introduction/Registration Form/
Communication Survey

DAY 2: Pre-Assessment
Determination of Individual Needs
Introduction to Text

WEEK 2:

DAY 1: Explain Pre-Assessment Results
Multiply/Divide Whole Numbers
Work Problems/Work Keys

DAY 2: Addition and Subtraction of Decimals
Workplace Problems/Work Keys

WEEK 3:

DAY 1: Multiplication, Division of Decimals
Workplace Problems/Work Keys

DAY 2: Review and Unit Test

WEEK 4:

DAY 1: Check Test Results
Introduction of Fractions (Addition/Subtraction)
Workplace Problems/Work Keys

DAY 2: Fraction - Multiplication and Division
Workplace Problems/Work Keys

MATH SYLLABUS (cont.)

WEEK 5:

DAY 1: Relationships: Fractions, Decimals, Percents
Workplace Problems/Work Keys

DAY 2: Relationships: Ratios/Proportions
Workplace Problems/Work Keys

WEEK 6:

DAY 1: Review/Unit Test 2

DAY 2: Check Test Results/graphs
Workplace Problems/Work Keys

WEEK 7:

DAY 1: Averages/Measurement
Workplace Problems/Work Keys

DAY 2: Geometry/Review for Final
Workplace Problems/Work Keys

WEEK 8:

DAY 1: Post Assessment/Surveys/Forms

DAY 2: TABE

APPENDIX F6

Mentor Memos

A Handbook for the Mentors of the Valmont 2000 Program

By JoAnne Kollross Woleben

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This handbook is dedicated to all of the Valmont plant personnel whose skills and talents are a vital part of the past, present, and future successes of Valmont Industries.

Valmont 2000 Mentors

Name	**Ext.**	**Dept.**	**Trained**
Egr, Daniel	3533 3589	1100	4-12-94
Fester, Leon	3707	2891	4-12-94
McCabe, Roy	3597	1260	4-12-94
Messerschmidt, Jim	3847 3848	2064	4-12-94
Potter, George	3504	1170	4-12-94
Schwarz, Mike	3786	2151	4-12-94

Why?

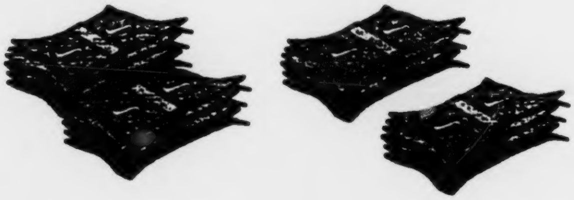
Why has Valmont Industries instituted a basic skills training program?

There is no short, easy answer to this. The truthful answer is long and has many parts. One cannot understand the complete answer unless all of the parts are considered.

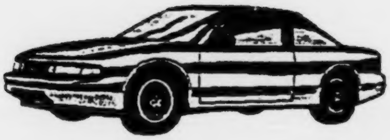
Every company, no matter what the industry, is in business to make money. Everything a company does should in some way work toward the goal of making money. This is good for **everyone** involved with the company. The upper management personnel are well compensated, the stockholders are pleased with their dividends and the value of their stock, and all the employees of the company continue to receive good wages and benefits. **Everyone** feels some security in being involved with a solid company that is making money.

If, on the other hand, a company is not making money, everyone loses that feeling of security.

It is important, therefore, for everyone involved with the company to work toward the common goal. When the company makes money, it is of benefit to **everyone**.



Companies are continuing to see changes in their industries. Many companies have continued with business as usual at a time when their competitors were responding to changes in the market place. Those companies who did not recognize or were not able to respond quickly to the need for change have found themselves in a position of losing customers and losing money.



Whole national industries have found themselves in this position. The Swiss lost their place as first in the watch industry when they did not recognize the importance of the quartz watch. And the American automobile industry has been fighting an uphill battle for years trying to regain a position of respect. At first they did not recognize the customer desire for smaller, more fuel-efficient cars; then they did not recognize the need to meet their competitors' standard of quality.

Individual companies have gone through vast changes due to their ability or inability to recognize the need to change for the marketplace. For companies like Motorola, that **recognized** the need, the purposeful changes they made to keep up with the market have made the company stronger than ever. For companies like IBM, that **did not recognize** the need , the changes that inevitably took place in the company were changes that occurred as a result of losing customers and losing money; a situation that caused hardship for many of the people involved with the company.

Along with needing to recognize the need for change, companies must also keep an eye on the competition. Lee Iacocca, Chief Executive Officer of the Chrysler Corporation, described the situation in business today very well when he said, "In today's competitive...industry, a company must lead, follow, or get out of the way!"

Valmont Industries is now in the lead in two product areas. We are the largest provider of street lighting and traffic signal poles in the world. And we are the world leader in overhead automated irrigation equipment. We do have competitors, though, and those competitors, like Lindsay Manufacturing Co., are not standing still. They are doing their best to expand their markets. Valmont has no desire to "get out of the way." We also are expanding our global markets. We intend to maintain our lead and continue to be a strong company on into the future. In order to do that we are involved in a number of programs to help us maintain our position as leader in these industries.

> Mogens Bay, the President and Chief Executive Officer of Valmont Industries, said, "Our company was founded in 1946 and over the years it has grown to a half a billion dollar manufacturing company. We have earned a leadership position in two industries... We didn't earn these leadership positions because we had access to more sophisticated production equipment or better computer systems than anyone else. We earned those leadership positions because of the people at Valmont. We have people who know how to out perform our competition. We believe very, very strongly that our most valuable resource is our human resource."

Because companies realize that they must be able to keep up with the marketplace, and because they realize that they must stay ahead of the competition, and because more companies are beginning to realize that the **people** they employ are their most important asset in achieving their goals, companies are investing more time and money in training now than they ever have before. They know they must keep their **people** up to date on all the skills required to make sure the company can keep up with the marketplace and ahead of the competition.

According to the American Society for Training and Development (ASTD), American corporations are spending about $30 billion a year to train their employees. Employers find that having a highly skilled, well-trained work force saves them money in the long run, so they see the benefits in providing the training.

Along with providing the training for the skills needed for new programs and new equipment, companies are finding that they need to provide training in the basic skills of reading, writing, and math. In the past several years, business publications have printed hundreds of articles concerning the need for training in this vital area. The concerns addressed in these articles are many. Changes in the workplace, increased competition, and new technologies have made some old production methods obsolete. The workforce must be flexible and adaptable. Strong reading skills are essential for adaptability. This concern is seen as particularly urgent as US companies are competing increasingly in the global market.

Several business organizations (including the Institute for Corporate Education and the Business Council for Effective Literacy) agree that 27 million American adults are extremely low in basic reading skills. The US Department of Education presents a similar figure and adds that another 47 million American adults have marginal reading skills. Some organizations feel that mathematic skills and communication skills (including writing and speaking clearly and listening) are of even greater concern.

Many companies across the country are now providing basic skills training for their employees. Motorola appears again and again in business publications as a company that is experiencing a great deal of success because of a variety of different efforts and strategies. Motorola is recognized as a pioneer in innovative training. During the year of 1988, Motorola spent $1 million on basic skills training for their employees. By 1993, that one company had spent $35 million training their employees in the basic skills of reading, writing, and math.

A few other companies that have provided or are providing basic skills training to their employees are Control Data, Ford Motor Co., Honeywell, US West, Polaroid Corp., Domino's Pizza Distribution Corp., and General Motors Corp. Many of the companies that offer this training work in partnership with another institution to establish the program. In 1989, *Training* magazine reported that about 10% of the smallest and 30% of the largest companies provided some training in basic skills. Within the past 5 years, more and more companies have joined the list. Locally, Airlite Plastics and Epsen Hillmer Graphics are working with Metropolitan Community College to establish basic skills training programs in their organizations.

More companies are offering this training because they have found that, over the years, jobs are requiring higher and higher levels of reading, writing, and math skills. Jobs requiring very low levels of these skills are gradually disappearing as the requirements of those jobs change. These companies have found that upgrading employee skills is cost-effective, and studies have shown repeatedly that it is an effective way to increase productivity over time. Benefits also appear in the areas of safety, quality, and personal development.

Valmont is committed to maintaining its leadership position in a business climate that demands the ability to recognize and make changes as they are needed. We realize that the people that make up the community of Valmont are the key to meeting the demands of that business climate. We know it is vital to train our people as needed to keep our work force skills up to date. In keeping with this philosophy, we have joined the long list of other successful companies that are addressing the need to train and update employees in the basic communication and computation skills of reading, writing, and math. We are pleased to be working with Metropolitan Community College as a partner in this endeavor.

> As Mogens Bay said, "We believe very, very strongly that our most valuable resource is our human resource. We also believe in continuous improvement: life should be a continuing learning experience. We must, at all times, upgrade our skill levels, beginning from the very basic writing, reading, and math skills. We are committed to this at Valmont because it is absolutely imperative for us to stay ahead in the markets we serve. That we continue to develop our human resource is what Valmont 2000 is all about."

Why Me?

Why should I take part in the Valmont 2000 training?

Again there is no short, easy answer for this. One must consider the combination of many reasons.

You and your work are vital to the success of Valmont Industries. Everyone within the organization of Valmont performs duties that in some way help the company in its effort to achieve the goal of making money. ***Everyone* depends on everyone else to perform their duties, because *everyone* wants the company to continue to make money.**

Everyone depends on top management. They make the decisions about which markets the company will pursue and which products and services the company will offer. They set the tone and establish the company philosophy. Wise management decisions play a vital role in the company's effort to achieve the goal.

Everyone depends on sales personnel. They seek out customers. They make sure that the products and services offered by the company are sold at a price that will insure that the company will continue to make money.

Everyone depends on the support services in the company. They make sure that all the employees of the company receive their pay checks and proper benefits, that our customers pay their bills to us, and that we pay our bills to our suppliers. There are dozens of support services that make sure that the workings of the company run smoothly and efficiently. If they did not, company time and money would be wasted and this would take away from the efforts to achieve the goal.

And everyone depends on the plant personnel. They build the product that is offered for sale. They build in the quality that makes a customer want to buy from us again. They produce the product on which the reputation of Valmont Industries is built. Producing a quality product is vital to our efforts of achieving the goal of making money.

You are a vital part of the Valmont organization, and Valmont has come to realize, like so many other organizations, that a workforce with a good command of communication and computation skills is imperative for a company to compete successfully in the business world of today and tomorrow. Skills that were adequate at the time when much of today's workforce was hired, will not meet the demands of the future. The skills that were required during the '70's and '80's will not be good enough for the 21st century; and the 21st century is coming upon us very quickly. This is, in part, why you should support the efforts of Valmont 2000 and take part in it. You will be doing what you can to make sure that you are ready for the changes that will continue to occur in your particular area. In this way you will be helping Valmont maintain its competitive position. You will be doing your part to make sure that you continue to work for a strong company, a company that can continue to make money for the benefit of all of the people of Valmont Industries.

You know that companies are constantly looking for ways to make more money. They try different business strategies and adopt different programs. Many of these strategies and programs prove to be very effective in either saving money or increasing income for the company. Programs like JIT should have the support of all employees because they help the company remain strong. Programs like this are of direct benefit to the company. They save the company money and increase efficiency. By helping the company remain strong and competitive, these programs indirectly benefit the employees.

There are two areas that provide direct benefits to the company, and **direct benefits** to the employees as well. These two areas are safety and training. In the area of safety, the company benefits by having fewer lost work days and reduced health care costs. The employees benefit by being made more aware of hazards so that injury can be avoided.

In the area of training the company benefits by having a skilled workforce that can perform the necessary tasks well and can adapt to any changes that will take place. The employees benefit by acquiring or strengthening skills; that is, they gain new knowledge that they will carry around in their heads forever. Once the employees have learned whatever it is that the training addresses, **no one** will ever be able to take that knowledge away from them. John Ruskin, an influential social critic during the 1800's said, "The highest reward for a person's toil is not what they get for it, but what they become by it." No where is that more true than in the area of training. A member of the board of the American Society for Training and Development suggests to employees, "Get all the training you can."

Some types of training are extremely job specific. The knowledge gained helps the employee to produce high quality products consistently. Other types of training are extremely important for the job, but can also be applied outside of the workplace. Team training and leadership training are good examples. The knowledge gained in these sessions can be used in employees' community, and even family, activities. Training in basic communication and computation skills provides the employees with knowledge that is necessary for the job, and that can be applied to every other aspect of the employees' lives.

The business publications mentioned in the previous section (Why?) detailed some benefits of basic skills training that affect the employee directly. They pointed out that employees taking part in this training understand their benefits packages better than they had before. They are also more likely to be promoted. Other publications cite examples of new experiences and accomplishments outside of the workplace.

Valmont employees who are taking part in the Valmont 2000 training are in good company. In recent years, millions of Americans have gone through this same type of training. Many are employees of some of the largest and most profitable companies in the country. The companies are seeing the benefits and so are the employees.

Valmont 2000 is a part of Metropolitan Community College. All of the Valmont 2000 staff, both full-time and part-time, are employees of Metro and receive their paychecks from Metro. Several members of the staff teach classes at one of the Metro campuses. As a Metro employee, the Director of Valmont 2000 has attended seminars to learn more about workplace programs and new training strategies that are presently being developed. The entire staff is committed to providing you with the best training possible.

The education staff meets for several hours weekly to discuss new strategies, evaluate materials, and make necessary changes to make the training more effective. They are constantly composing new workplace problems and revamping the curriculum in order to make the training as work-related as possible. Smaller groups of teachers meet to incorporate the new ideas into the particular training areas of reading, writing, and math.

All of the student records are kept confidential and maintained as the property of Metropolitan Community College. Valmont Industries personnel have no access to these records and they have demonstrated complete respect for the confidential status of student files.

A task force composed of members of the Valmont 2000 staff and various levels of personnel from Valmont Industries meets regularly to discuss the progress of the training program. This open line of communication is extremely important to insure that Valmont 2000 provides the training that the company needs in a way that is most effective and beneficial to employees.

What?

What are all the steps involved in the Valmont 2000 Program?

The following four sections will give rather detailed descriptions of the four parts of the Valmont 2000 Program.

1. **The Job Analysis**
2. **The T.A.B.E. Session**
3. **The Counseling Session**
4. **Training Sessions**

A Job Analysis is done for a specific job classification to determine exactly what tasks are performed on a job and what skills are needed to perform those tasks, concentrating on the level of skills needed in reading, writing, and math.

Following the Job Analysis, everyone in that particular job classification takes the T.A.B.E. to assess each employee's present skill level in the areas of reading, writing, and math.

Following the T.A.B.E., each person meets individually with a counselor to discuss the results of the T.A.B.E. and any need for training, and to discuss career plans and possible enrichment options that are available at Metropolitan Community College.

Following the individual counseling sessions, those employees that are scheduled for a specific area of training participate in the appropriate training sessions. All employees scheduled for classes are expected to participate. This training is not optional.

People who will be retiring within two years are the only employees who have the option of not taking the training. In order to exercise this option, an employee must fill out the necessary retirement papers, indicating the expected date of retirement. If the employee later has a change of mind, it is possible to delay the date of retirement. At the time that the plans are changed, the issue of training will be addressed once again.

Job Analysis

The first aspect of the Valmont 2000 program is the job analysis. The purpose of this is to determine the tasks that are done on a particular job and the skills needed to perform those tasks. The Valmont 2000 job analysis concentrates on the level of skills needed in reading, writing, and math.

The first step in this process is establishing a job analysis team. This team is composed of a supervisor, a leadman, and two incumbents. Publications about job analyses often refer to incumbents as subject matter experts (SME's). These are the people who do the job on a daily basis; they are the people who actually perform the tasks. A job analyst (who is a member of the Valmont 2000 staff and, like all the other Valmont 2000 staff members, is an employee of Metropolitan Community College) is also part of this team.

Once the job analysis team has been established, the job analyst visits the work site to observe SME's in action. This allows the job analyst to become more familiar with the job and to make some preliminary notes about the tasks that are performed. Some videotaping will be done at this time also.

The job analyst then interviews SME's, two at a time. Several pairs of employees are interviewed. Some of these employees will answer questions on computerized forms; no names are recorded on these forms. All of these SME's will answer questions presented by the job analyst about tasks that are performed on the job and the skills that are needed. As a result of these interviews, the job analyst will compile a list of job tasks, and a list of abilities needed. Other sources of information (like the job description) will also be used to make sure the lists are complete. The required levels of the skills of reading and writing are then determined by education staff.

The job analysis team then provides two different ratings for each task on the list. They rate the importance of the task and how frequently it is performed. They also match the reading, writing, and math skills to the tasks where they are needed. The job analyst calculates the average rating for each task. That information is entered on the final report.

The final report is prepared by the job analyst and approved by the job analysis team and other staff members who have had input into the process.

T.A.B.E. Sessions

Everything involved with this session takes about 5 hours. The time is scheduled as either a 5-hour block in one day or two 2 1/2-hour blocks on two consecutive days. Groups of up to 30 employees may be involved in a session. In the beginning of this session, employees fill out a consent form and a survey before starting the T.A.B.E.

The **Test of Adult Basic Education** (T.A.B.E.) is one of the assessment tools used by Metropolitan Community College to determine the level of skills of an incoming student. Because Valmont 2000 is under the auspices of Metropolitan Community College, we are using the T.A.B.E. as an assessment tool also.

The T.A.B.E. is actually a combination of several tests that cover different areas of reading, math, and language expression. The reading tests cover vocabulary (understanding the meaning of individual words) and reading comprehension (understanding the meaning, both stated and implied, of a short passage). The math tests cover computation (adding, subtracting, multiplying, and dividing) and concepts and applications (such as problem solving and measurement). The language tests cover mechanics (capitalization and punctuation), expression (sentence structure and word usage), and spelling.

The T.A.B.E. is available in 4 different levels of difficulty; the first level is the easiest, and the fourth is the most difficult. The third level of the T.A.B.E. is used in the Valmont 2000 program. It is a level that has been used in other industrial settings. It is very important to know which level of the T.A.B.E. is being used when it is time to interpret the scores.

Many people do not fully understand the meaning of the grade equivalencies that are noted on the test results. Because of this, there is often confusion when test results are interpreted.

The third level of the T.A.B.E. covers material within the grade ranges of 6.6 to 8.9 (6th grade, 6th month to 8th grade, 9th month). This does not mean that every person at the 8.9 level has mastered all of this material. It simply means that the material is generally regarded as subject matter that has been presented sometime during the grade levels of 6.6 to 8.9.

When testing companies create a test, it is administered to large numbers of people before it is offered as an assessment measure. The more conscientious companies administer a given test to thousands of people. This is the way to "norm" a test; it is a way to find out what is the "normal" (average) score for a specific group of people. In order to find *grade equivalencies*, the test is administered to *students* who range in age from several years below the range of the test to several years above (in the case of the third level T.A.B.E., to 12.9). Many standardized tests have been normed on students in these grades, because many tests depend on grade equivalencies.

After the test is administered to the large group, the scores of each segment of the group (for instance, each grade level) are looked at separately. The average score for that segment is determined and the grade equivalent of that group is then attached to that score. The average score for the segment of the group that is in the 10th grade, 5th month, for example, is given the grade equivalent of 10.5. In this way, the scores of each segment of the group are used to establish the norms.

There is really no way to define an "average" high school student in terms of what a student has learned. There is such a wide array of course offerings and such a large range in difficulty levels, it would be impossible to create a test that indicates what an "average" student (at any grade level) knows or is able to know. Therefore, the best that can be done is to create a test and determine what the average *score* is for a certain group of people *on that test.* This is *all* that grade equivalencies can claim to show.

On the T.A.B.E. test, a grade equivalent of 10.5, for example, does *not* indicate that the test taker has mastered skills at a 10th grade, 5th month level. Because the normed score is simply the average score of students at a particular grade level, it means only that the test taker has done as well *on that test* as an "average scoring" student that has reached the 5th month of the 10th grade. The level of the test itself must still be considered.

The T.A.B.E.'s are scored mechanically at Metropolitan Community College. The T.A.B.E. scores are seen only by the test taker and by members of the Valmont 2000 staff who have legitimate reason to see them (e.g. a counselor or the instructor). The scores are kept in a locked cabinet and *everyone* on the Valmont 2000 staff considers the issue of confidentiality of scores to be a very serious matter. If, at some time in the future, the Valmont 2000 office is moved off the premises of Valmont, the files containing the T.A.B.E. scores will be transferred immediately to Metropolitan Community College. No one from Valmont Industries has, or will have, access to these scores. Valmont Industries personnel (including those in management) understand this and have shown complete respect for the confidential status of the scores. *If* a test taker, for whatever reason, *wants* a member of the Valmont Industries staff to have access to the test taker's scores, *the test taker must personally notify the Valmont 2000 office.* Without such a personal notification, *no one* outside of the Valmont 2000 office will have access to the scores.

Each test taker will have a personal copy of his or her own T.A.B.E. scores. That person alone must assume control over who sees that personal copy of the scores.

Counseling Sessions

When the T.A.B.E. results are received in the Valmont 2000 office, the counselors meet with Dr. Ken Jones, who directs the activities of the Valmont 2000 education staff. They look at the scores for each employee and compare the scores for each individual section of the T.A.B.E. with the requirements for the job. In this way they make the preliminary determination of who needs to be scheduled into the Valmont 2000 training program.

Within a week to 10 days after taking the T.A.B.E., employees attend an individual session with one of the career counselors. The counselors, like all the other members of the Valmont 2000 staff, are employees of Metropolitan Community College. The session takes about 35 minutes. Each employee and a counselor meet privately in the Valmont 2000 conference room.

During this session the employee receives a personal copy of his or her own T.A.B.E. scores. The counselor discusses the scores with the employee and helps to interpret all of the information on the score report. They also compare the employee's level of proficiency in particular skill areas with the skill level that is required by the job.

Together the counselor and employee fill out the Individual Education/Career Plan (IEP). This details future training and career development plans and options for the individual employee. At this time, the counselor provides information about enrichment programs and courses available at Metropolitan Community College if the employee requests it. The employee is free to ask any questions about further educational opportunities. If needed, the employee is scheduled into one or more classes within the Valmont 2000 program. At the end of the session, the employee fills out an employee survey.

After the counseling sessions, Dr. Jones and another Valmont 2000 staff member review the files to determine if any additional information surfaced during a session that would indicate another employee is in need of training. The training group lists are then prepared for the three areas of training.

Training Sessions

After the lists are compiled for the three training areas of reading, writing, and math, the training courses are coded A, B, and C. Each supervisor is given a list of the people in that specific department who need training. Each person's name is followed only by the code letter of A, B, or C. There is no way for the supervisor to determine from this list which particular training course an employee will be taking. The supervisor is also given a schedule of the different courses; each course generally is offered at several different times. Again, the courses are identified only with the code letters A, B, and C. The supervisor schedules each employee into an appropriately coded course. The supervisor has this input into the employee course scheduling so that production will not be hindered.

Dr. Ken Jones and a staff of qualified instructors conduct all of the training sessions for Valmont 2000. All members of the education staff, like all the other Valmont 2000 personnel, are employed by Metropolitan Community College.

The work-related skills covered by the Valmont 2000 program are reading, writing, and math. The 1 1/2 hour training meetings are held twice a week for 8 weeks. There are generally 5-10 students in each training group. The training area is a rather informal setting where all students work, sitting in a group, around two large tables.

The first meeting of each session starts with an orientation. This includes an explanation of Valmont 2000 and an introduction to the material that will be covered during the session. Any employee questions will be answered at this time.

During the first week of the session, the instructor will administer a pretest that has been written by the education staff. This pretest will let the instructor know which areas need to be stressed during the training meetings. The results of this test will be seen only by the student, the instructor, and, possibly, Ken Jones, who directs the activities of the education staff for Valmont 2000.

In each of the three training areas, learning guides and workplace problems are used to build skills in the particular area of study. Periodically, a textbook may be used as a supplement. Other media, such as interactive videotapes, may be used. After written tasks have been completed, there will be occasions when the students will check their own work during the training meeting. Review lessons or quizzes may be given a few times during the session; one or two tests will also be given so that the students can see their own progress. All of the work done in connection with the session will be kept in a student folder. The work will be seen only by the student and the instructor. All through the session, the instructor will provide written feedback on the students' papers so that the students will be able to see their own progress. If an instructor would like some advice on how to provide additional help to a particular student in a specific area, that instructor will get that advice from Ken Jones or other faculty members. Sometime near the end of the session, student work will be returned to the students. However, in order to protect the integrity of the tests, those cannot be returned. Absences during the training sessions will be tracked to determine the reason (for example, illness, disability, or production needs).

At the end of the session a posttest (similar to the pretest given at the beginning of the session) will be administered. Once again, the results of this test will be seen only by the student, the instructor, and, possibly, Ken Jones. At this time, the student will also retake the portions of the Test of Adult Basic Education (TABE) that pertain to the particular subject area covered during the session. For example, if the session covered math, only the math portions of the TABE would be retaken. The results of this testing will be filed with the results of the TABE test taken earlier and will be kept within the records of Metropolitan Community College. Students will also complete several surveys and a teacher evaluation form. These will be used by the Valmont 2000 staff.

In order to complete the training successfully, a student must achieve an average of 80% or more on all of the session work and tests assigned by the instructor. None of the scores from the TABE, the pretests, or the posttests will be used to figure a student's average.

Students who successfully complete the requirements will receive a certificate, a copy of the results of their latest TABE scores, and a copy of their Individual Education/Career Plan (IEP). All of this will be sent to each individual student's home through the mail.

If a student is not successful in completing the training requirements, an attempt is made by the Valmont 2000 education staff to determine whether the student is having difficulty doing the work or simply is not trying. The names of students who are having difficulty meeting the minimum requirements of an 80% average are referred to Ken Jones. The instructor and Dr. Jones discuss appropriate options to help the employee meet the training requirements. Each case is handled individually. The instructor contacts the employee regarding the options. Options may include retaking the class, making up incomplete work, getting special needs counseling from Metro staff, or other ways to *help the individual be successful.*

If a student does not meet the training requirements because the student will not try to do the work, this is discussed with an HR rep. The particular circumstances of the situation are considered, options are discussed, and each case is handled individually as circumstances warrant.

Reading Sessions

These sessions address, among other skills, reading to follow directions, locate details, find information, and draw conclusions.

Writing Sessions

These sessions address, among other skills, writing to report information, pass on information, make requests, and respond to requests.

During both the reading and writing sessions, a training meeting is devoted to E-mail training. It is conducted by Pat Fiedler, the E-mail trainer for Valmont. Nothing is turned in to anyone for this meeting, it is strictly an opportunity to gain computer experience. At this time each student is given an access number for E-mail. No one else can access a person's E-mail unless the individual gives out the necessary password. It is possible that, in the future, training for other computer related skills will be added to the writing session.

Math Sessions

These sessions address, among other skills, performing calculations and conversions, and expressing relationships.

$$+ \quad > \quad = \quad X \quad < \quad -$$

The workplace problems are situations that have been written by the instructors or the employees.

Depending on the level of understanding of the training material and the level of progress made during the session, a student may have the opportunity to take the posttest and complete this class in less than the designated 8 weeks.

Phone Numbers

Name	Ext.
Dr. Margaret Durr, Director of Valmont 2000	3128
Dr. Ken Jones, Full Time Instructor, directs education staff activities	3157
Mr. Steve Narans, Human Resources Representative	3142
Ms. Hope Songster, Secretary Valmont 2000	3151
Ms. JoAnne Woleben, Coordinator Mentor Training, Valmont 2000	3111

APPENDIX F7

PART TIME EMPLOYEE

ORIENTATION HANDBOOK

WELCOME TO VALMONT 2000

A educational partnership between Metropolitan Community College and Valmont Industries, Inc.

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VALMONT 2000
MISSION STATEMENT

To develop a *world class, well educated, motivated, and flexible workforce* who is prepared to successfully meet the changing demands of the environment within which Valmont operates. The development process will include the following specific objectives:

- Conduct a thorough analysis of the work being performed at Valmont.
- Identify the critical reading, writing, and math skills required for each job.
- Assess employee reading, writing, and math skills.
- Compare employee skills to those required by the job.
- Provide an individualized development plan and training to overcome any skill deficiencies.
- Involve Valmont employees, at all levels, in the planning process.
- Utilize multiple methods to deliver skills training, e.g., interactive video, classroom instruction, individualized teaching assistance, and self-directed study.
- Utilize a third party to administer employee skills assessment to maintain confidentiality.
- Evaluate the effectiveness of the program on an on-going basis to provide for continuous improvement.

VALMONT 2000: QUESTIONS AND ANSWERS

Q. *What is Valmont 2000?*

A. Valmont 2000 is a program to increase employee reading, writing, and math skills required by the job.

Q. *How does Valmont 2000 work?*

A. Valmont 2000 is a 5 step effort.

Step 1: Conduct a thorough analysis of the work being performed.

Step 2: Identify the critical reading, writing, and math skills required by the job.

Step 3: Assess employee reading, writing, and math skills.

Step 4: Compare employee skills to those required by the job.

Step 5: Provide individualized training to overcome any skill deficiencies.

Q. *How far along is Valmont 2000?*

A. To date, 23 jobs have been analyzed and the critical reading, writing, and math skills have been determined. We have also begun to analyze an additional 25 jobs.

Q. *Can you tell me more about the test?*

A. The test that we use is the *Test of Adult Basic Education* (TABE). The test consists of several parts. Each part focuses on one or more basic reading, writing, or math skills. For example, the math test will tell us how proficient you are at adding, subtracting, multiplying, and dividing whole numbers. It also tells us how proficient you are in working with fractions and percents.

Q. *Do I have to take the test?*

A. Yes. It is essential that all employees take the test. Results will typically be provided within 7 to 10 days following testing.

Q. *What if I don't do well on the test?*

A. If you perform below the skill level required by your job, you will be given an opportunity to receive individualized training on-site at Valmont to overcome the deficiency.

Q. *Who will see my test scores?*

A. Only members of the Valmont 2000 staff (employees of Metropolitan Community College) and members of the Valmont Human Resources Department will have access to your test scores. Department managers, supervisors, and your co-workers will only know your test scores if you tell them your scores.

Q. *What is in it for me?*

A. Valmont 2000 has been designed with you in mind. Its goal is to see to it that you have the necessary skills to achieve your best. Valmont 2000 provides you a free assessment of your reading, writing, and math skills and an opportunity to receive free job-specific skills training on-site at Valmont. We expect that you will become more confident in your ability to perform your job and more satisfied with the opportunities for growth at Valmont.

Q. *Can I take a Valmont 2000 class for reading, writing, or math skills not required by my job?*

A. Yes. The class must, however, be taken on your own time.

Q. *Can I take additional courses offered by Metropolitan Community College?*

Certainly. If you have any doubts concerning eligibility for educational assistance, it is always best to contact the Human Resource Department.

Valmont 2000 Project
Organizational Chart

Division Chair
Counseling & Academic Advising
- Larry Lindberg
1.0 FTE

Valmont H.R. Director
- Steve Narans
1.0 FTE

Valmont 2000 Project Coordinator
- Margaret Durr, Ph.D.
1.0 FTE

Full-Time Instructor
- Ken Jones, Ed.D.
1.0 FTE

Career Counselor
- TBA
- .50 FTE

Job Analyst Specialist
- Kevin Spier/JoAnne Woleben/Stephanie Armstrong.
.50 FTE

Project Secretary
- Hope Songster
1.0. FTE

Part-Time Instructors
- TBA
1.5 FTE

VALMONT INDUSTRIES
VALMONT 2000 PROJECT
DIRECTORY

Bob Abel
Social Science/Service
Division Chair
289-1210 Wk
397-1629 Hm

Stephanie Armstrong
Job Analyst
9505 Western Circle #6
Omaha, NE 68114
397-5194 Hm

Donna Billesbach
P.T. Counselor
5010 S. 124th Street
Omaha, NE 68137
895-1297

Whit Bonifant (V)
Vice President, ICPD
359-2201 x 3816

Marv Broman (V)
Safety Systems Supervisor
359-2201 x 3166
359-4061 FAX

Vanessa Brown (V)
Manager, Human Resources,
ICPD
359-2201 x 3146
359-5122 FAX

LaNeta Carlock
P.T. Counselor
2328 N. 55th Street
Omaha, NE 68104
551-7893

Mark A. Carta
Special Needs Program
Coordinator/Interviewer
449-8344 Wk
449-8334 FAX

Nick Carter
Project Teacher Assistant
112 Meadow Lane
Gretna, NE 68028
332-3027

Nancy Conrad
P.T. Instructor
324 S. Mayne
Valley, NE 68064
359-2094 - Hm

Conrad Deocariza
Project Teacher Assistant
12731 S. 35th St.
Omaha, NE 68123
292-7208

Margaret Durr, Ph.D. (M)
Valmont 2000 Director
359-2201 x 3128
359-4470 FAX
553-2171 Hm

Joe DiMari (M)
TABE Tester
449-8344 FOC
1-533-2082 Hm

Ralph Ekwall
P.T. Counselor
15749 Valley St.
Omaha, NE 68130
330-8259 Hm

Don Fritz (V)
Manufacturing Manager
359-2201 x 3551
359-5681 FAX

Teri Gibson (M)
Faculty Consultant-Reading
10310 Hilltop Road
Omaha, NE 68134
449-8510 SOC
493-2329 Hm

Marty Hagge (V)
Supervisor-Galvanizing
Technical Advisor
359-2201 Wk
359-4429 FAX

Patricia Halverson
Project Evaluator
Academic Achievement 610
DMACC
2006 S. Ankeny Blvd.
Ankeny, IA 50021
(515) 964-6821 Wk
(515) 964-6834 FAX

Marita Hahn(M)
P.T. Instructor
3124 S. 116th Street
Omaha, NE 68144
333-4492 Hm

Vicky Hamm (M)
Faculty Consultant-Math
20675 Rawhide Rd
Elkhorn, NE 68022
289-1224 EVC
289-3434 Hm

Terry Heany
P.T. Instructor
RR 1 Box 141
Ft. Calhoun, NE 68023
468-5498 Hm

Karin Hjerpstedt
P.T. Instructor
14721 Weir
Omaha, NE 68137
895-9534 Hm
289-1266 Wk

Diane Hocevar
P.T. Instructor
16624 Frederick Circle
Omaha, NE 68130
334-5545

Sandra Hunter
P.T. Instructor
220 N. 32nd Ave
Omaha, NE 68131
342-7262

Judith Jennum
P.T. Instructor
5631 So. 114th
Omaha, NE 68137
331-8701 Hm

Ken Jones, Ed.D.
Full Time Instructor
359-2201 x 3157
359-4470 FAX
455-8160 Hm

Rob King (V)
Manufacturing Manager
359-2201 x 3772
356-4481 FAX

Larry Lindberg (M)
Division Chair/Counseling
& Advising
449-8310 Wk

John Mangini (M)
Math & Science
Campus Manager/Div Chair
449-8360 Wk

Lisa McAloon (M)
Interviewer/TABE Tester
449-8344 FOC
498-3727 Hm

Becky Michaels
Project Teacher Assistant
110 West Meigs Street
Valley, NE 68064
359-2165

Liz Miller
U.S. Dept. Education
400 Maryland S.W.
Switzer Building
Room 4512
Washington D.C. 20202-7327
(202) 205-9414

INCLEMENT WEATHER PROCEDURES

During inclement weather conditions, classes or other College activities may have to be canceled or delayed. Because weather conditions may vary within the College area, it may be necessary to cancel or delay some classes or activities while other campuses or locations continue to operate.

DELAY OF CLASSES

Delay of classes means classes will start later than normal. The delayed class time will be announced as soon as possible. Students should report to class at the announced time; faculty and staff are to report to work at the normal time.

CANCELLATION OF CLASSES

Cancellation of classes means that classes will not take place. Students are not required to report for class, but faculty and staff are to report at the normal time.

CLOSING THE COLLEGE

Closing the College or a particular campus means that no classroom or business activities will take place. No students, faculty or staff are expected to report, except those employees specifically designated to report for work.

If only specific campuses or locations are affected, students and staff of that location will follow directions given in the weather announcements. Students and staff at other locations will report as usual.

HOW WILL ANNOUNCEMENTS BE MADE?

If classes are canceled or delayed or if particular campuses/locations are closed, announcements will be made on the following radio stations by 6:00 a.m. or as soon as possible:

KFAB	1110-AM	KEZO	92.3-FM
KGOR	99.9-FM	KOIL	1290-AM
WOW	590-AM	KXKT	103.7-FM
WOW	94.1-FM	KKAR	1180-AM
		KQKQ	98.5-FM

Metro also has two weather cancellation hot lines which give recorded messages regarding cancellations.

Credit Classes	449-8499
Non-Credit Classes	449-8572

IF YOUR FAMILY NEEDS TO REACH YOU IN AN EMERGENCY WHILE YOU ARE IN CLASS?

Emergency messages can be left with the Admissions and Records offices on each campus.

Fort Omaha Campus	449-8300
South Omaha Campus	449-8500
Elkhorn Valley Campus	289-1200

IF YOUR CAR WON'T START WHILE ON CAMPUS?

Help with jump starting your car is available by calling Admissions and Records or Public Safety and Assistance.

Fort Omaha Campus	449-8300	A & R Office
	449-8313	Public Safety
South Omaha Campus	449-8500	A & R Office
	449-8569	Public Safety
Elkhorn Valley Campus	289-1200	A & R Office
	289-1218	Public Safety

Confidential
VALMONT INDUSTRIES
METROPOLITAN COMMUNITY COLLEGE
PAYROLL PROCEDURES

__DUE DATES:__ Time cards are due in to your Supervisor on pay day (the 15th or 30th of the month). Supervisors are to turn time cards in to the Payroll Office not later than three days after the 15th or 30th of the month.*

__TIME CARDS:__ Time cards must be signed by your supervisor. Each time card will have two weeks time worked notated (i.e.: Days worked from the 1st - 15th on one, Days worked from the 16th - 30th* on the other). Copy all time cards for your files. Check your time against your schedule to insure accuracy.

__PAYMENT:__ Employees will be paid on the 15th or 30th.* In the case of these dates occurring on a weekend or holiday, pay checks will arrive as close to these dates as possible. Payments are always two weeks in arrears.

*On the last day of the month be it 28th, 29th, 30th or 31st.

PAY PRACTICES FOR VALMONT 2000 PART-TIME STAFF

PART-TIME TRAVEL REIMBURSEMENT FOR TRIPS TO VALMONT

Employees will receive round trip travel from the nearest campus (the Elkhorn Valley Campus) consisting of 20 miles, at 28 cents per mile. They will also receive 1/2 hour of pay per round trip. To receive the travel pay, you should complete the Metro Community College Reimbursement Voucher for 20 miles at 28 cents per mile for each round trip. Please turn these in at the time you turn in your time card.

Also add 30 minutes per each round trip to the time card hours recorded per day during the payperiod. On the back of the time card the employee should note that he/she included travel time as a part of the worked hours reported for that day on the part-time staff activity log (see attached).

PART-TIME TRAVEL REIMBURSEMENT FOR TRIPS WITHIN OMAHA

Instructors and Counselors will receive round trip travel from the nearest MCC campus to their destination in Omaha. For example, if instructors were asked to meet at Omaha Public Schools (30th and Cumings) they would need to indicate a trip from Fort Omaha Campus to OPS for 7 miles (3 1/2 miles each way).

The 30 minutes of travel time will __not__ be reimbursed for travel within Omaha. Reimbursement for the 30 minutes of travel time applies only to the trips made to Valmont.

PART TIME PAY RATES

Counselors - Receive $12.77 per hour. Counselors job duties include conducting TABE Test Review Sessions and administering the TABE.

Instructors - Receive $12.77 per hour. Part Time Instructors job duties include classroom instruction and curriculum development.

Consultants - Receive $22.50 per hour unless they are already part of the Metropolitan Community College Bargaining Unit, then they are paid at $25.00 per hour. Consultants are full-time Metropolitan Community College employees whose job duties include specialized consulting regarding curriculum and project administration activities.

Teacher Assistants - Receive $7.00 per hour. Teacher Assistants job duties include working with the instructors to provide more individualized training.

-IMPORTANT NOTICE-

In order to be paid:

1. Please refer to the attached sample of each form and complete the necessary paperwork accordingly.

2. Complete the part time staff activity log and be sure to staple this to the back of each time card.

3. Any paperwork turned in which is not completed correctly will be given back to the employee for correction. This will most likely result in a delay in payment for the employee.

PART TIME STAFF LOG
DESCRIPTION OF DUTIES

In order to meet the documentation requirements of the grant, the duties for the part time staff must be explicitly logged in such a way that the time required for each separate duty is clearly identified. As a result, we would like you to use the following duty descriptions to classify your activities and record them as such on your activity logs. You need to review previous time cards so that the time you have already submitted will be identified according to the descriptions listed below. The duty descriptions you should utilize are as follows:

DUTY	DUTY DESCRIPTION
Curriculum Development	**(Instructors Only- 1 hour per week)** Duties classified under this category include initial development of curriculum for use during classroom instruction. This is defined as the development time required for the initial preparation of the class. When you have developed classroom materials which are to be used for the first time during the classes, your time would be recorded under this activity. Examples: Development time for putting together the first writing lesson plan, development time for the pre-test in Math to be given for the first time. Currently curriculum development is used to add 12 workplace problems to the existing curriculum, and minor changes and modifications made after shop visits.
Preparation Time	**(Instructors Only- 45 minutes per class, except week 1,5, and 8 then 1 1/2 hours is allowed per class)** Duties classified under this category include re-reading, updating or making modification to existing lecture notes, lesson plans, assessment tools prior to teaching the class, and meetings with Teacher Assistants. Arranging for cassette players or other AV equipment, sharpening pencils, grading papers, and obtaining supplies for the class are other duties under this classification.
Classroom Instruction	**(Instructors and Teacher Assistants- 1 1/2 hours per class)** Duties classified under this category include actual time spent in the classroom. The duties of TABE testing will be included under this classification.
Skills Assessment Team	**(Instructors and Job Analysts only- 0 hours - by prior approval only)** Duties classified under this category include meetings of the team to determine reading and writing grade equivalencies and review of job specific video tapes and job analysis documents to be utilized in making skills assessments at the request of the job analyst.
Staff Meeting	**(All staff when requested - 2 hours per week)** Duties classified under this category include attendance and participation in scheduled meetings of the Part Time Instructor Staff. This is listed under "Other" on the Part time Instructor Staff Activity Log
Instructional Time:	**(Teacher Assistants - 15 minutes per class)** This will include any additional time up to 15 minutes per class for any instructions given by the instructor before or after class.
Training:	**(All staff, however prior approval must be received)** Duties under this classification include any training done on E-Mail, Interactive Video, and any other computer work, however, you must document the exact training being done (E-Mail, Interactive Video, etc).
Orientation	**(All new employees as scheduled-3 hours)** Duties performed under this classification include time spent outside of class for tours, paperwork for staff (payroll, employment forms, and going over orientation material with staff). Again, this must be documented accurately, and be specific as to what type of orientation is being performed. This will also include your initial class orientation for the first day of class.
CAT Teams	**(Instructors Only- 0 hours)** This classification is for the activities of the Action Teams designed for curriculum development. Currently any hours used under this classification must have prior approval.

Action Teams	**(All Staff as assigned - 0 hours)** This will include any additional time spent on the Action Team assignments. Currently any hours used under this classification must have prior approval.
Student Evaluation	**(Instructors- 2 hours per session)** This classification is for the evaluation of student files, the preparation of IEP, and the completion of certificates.
Instructor Evaluation	**(Instructors - 1 1/2 hours per session)** This classification is for the evaluation of instructors, peer evaluations and feedback sessions on performance. Other observation time, re-training time is not an allowable expense, and will not be accepted for payment on a time card.
Travel Time	**(Instructors and Counselors - 1/2 hour per day)** This classification is for the travel time from the closest MCC campus to Valmont. Expenditures will be for one trip per day only. All other travel must be approved by the Project Director prior to being submitted for payment.
Staff Development	**(Instructors and Counselors - 4 hours per month)** This classification involves the project staff in professional development activities. Staff Development activities may include workshops on EPIC, Valmont tours arranged by the Job Analyst, Job shadowing, etc. All staff development activities must be approved by the Full Time Instructor prior to participation.
Mentoring	**(Mentoring Coordinator - 0 hours - by prior approval only)** The duties of the mentoring coordinator is to review with the mentors problems or concerns that are being addressed by the mentors. This contact will be provided by phone or through e-mail. All time must be approved by the Project Director.
TABE Administration	**(Counselors-5 hours per session)** Duties include the administration of the TABE initially.
TTRS	**(Counselors-35 minutes per session)** Duties include the individual meetings with potential students.
Review Files	**(Counselors - 45 minutes before each session)** This classification will include reviewing the files with the Full Time Instructor to determine class requirements for future students.
Review Files	**(Instructors - 45 minutes before each session)** This classification will include reviewing the files prior to the first day of class.
Special Requests	**(All staff - 0 hours - by prior approval only)** The items listed under this classification would require an additional hours approval form be submitted prior to initiating the activity. These items include: one to one instruction, IEP conferences for students, working with students on additional training, additional tutoring sessions, conferences with the Teacher Assistant. Any other duties which do not fall into a category listed above should follow the steps for approval as a special request.
Work away from Program	**(All staff - 0 hours - by prior approval only)** All duties which require performance of the job duties away from the Valmont 2000 facility, will require prior approval by both the Valmont 2000 Project Director and the Full Time Instructor.

SPECIAL INSTRUCTIONS:

As a tracking tool, it is necessary to list each date and the total for that day separately.

EXAMPLE:

PART TIME STAFF ACTIVITY LOG (WHITE SHEET)

Curriculum Development	6/23/93	2 hours
	6/29/93	3 hours
Travel time to Valmont	6/27/93 6/29/93	1 hour

Time for driving can be added into one total. This total drive time should only be included under the "Travel time to Valmont" activity on the Part Time Staff Activity Log. It should not be added into the time recorded for any other activity category. It should be added, however, to the total time spent per day on the front of the timecard.

FRONT OF TIME CARD

6/29/93	3 1/2 hours

Travel time to Valmont	6/27/93 6/29/93	1 hour

Time for driving can be added into one total. This total drive time should only be included under the "Travel time to Valmont" activity on the Part Time Staff Activity Log. It should not be added into the time recorded for any other activity category. It should be added, however, to the total time spent per day on the front of the timecard.

FRONT OF TIME CARD

6/29/93	3 1/2 hours

*part-time Staff Activity Log (Per Pay Period)

TIME
ACTIVITY
DATE(S) SPENT

1. Tabe Test Administration ________ ________

2. Tabe Test Results Session ________ ________

3. Curriculum Development ________ ________

4. Classroom Instruction ________
____

5. Job Analysis ________ ________

6. Travel Time To Valmont ________ ________

7. Skills Assessment Team (Please Specify)
________________ ____ ________
________________ ____ ________
________________ ____ ________
________________ ____ ________
________________ ____ ________
________________ ____ ________
________________ ____ ________
________________ ____ ________

8. Other (Please Specify)
________________ ____ ________
________________ ____ ________
________________ ____ ________
________________ ____ ________
________________ ____ ________
________________ ____ ________
________________ ____ ________
________________ ____ ________

*All information should correspond to the work hours listed on the time card.

Attached you will find a copy of the Smoke Free Workplace Policy of Valmont Industries. Please add this to your employee handbook. Please note that smoking is prohibited in all areas of the facility. Even though Valmont 2000 staff are employed through Metro Community College, while on the Valmont Facility, they will be expected to adhere to the attached policy.

Effective July 1, 1990.

A. Smoking is prohibited on all Valmont property, (including company vehicles).

IV. PROVISIONS

A. All outside recruiting decisions will consider the above restrictions. The responsibility is shared by the hiring manager and the Human Resources Department.

B. Current employees who smoke will not be precluded from consideration of other internal positions.

C. Job applicants will be required to complete an application explaining Valmont's policy of not hiring smokers. Falsification of information on the application, including questions related to smoking, would be considered grounds for dismissal.

D. The Vice President, Human Resources shall provide such Administrative Guidelines as may be necessary to implement and govern this policy.

E. Exceptions to this policy require the approval of the appropriate division head, the Vice President, Human Resources; and the President, and Chief Executive Officer.

APPROVED ______________________ DATE 2/13/91
William F. Welsh II, President, CEO

APPROVED ______________________ DATE 2/13/91
Tommy L. Whalen V.P. Human Resources

APPROVED ______________________ DATE 2/13/91
Gary L. Crouch, V.P./Controller

ROOM B

The majority of supplies that you will be using for classroom instruction/counseling sessions are in room B. If you find something absent, please check the overhead bins, and if not there, leave the Secretary a note. Thanks for your help in keeping these supplies stocked.

Job Tasks/Job Competencies for each position are located in the bottom file drawer in room B.

AFTER HOUR APPOINTMENTS

When giving an individual a card for an appointment after normal business hours, please be sure to remind them that they will need to utilize the Buzz door or double doors located at the Loading Dock for entrance into the Bldg.

KEYS

In an attempt to be more secure with our files, we have placed all items related to the employees files and TABE testing, in a locking cabinet, in Dr. Durr's office. All items related to classroom instruction are placed in the cabinet in Dr. Ken Jones' office. The keys to these cabinets can be obtained from either Dr. Durr, Hope Songster or by checking them out at the South Security Gate. Your names have all been added to a list of individuals allowed to check out the keys. You must stop at the gate, tell them you name, and sign a check-out sheet. Upon leaving Valmont, you must again stop at the gate and check the keys back in. You may have to show identification at the time you check out. Key number 1 is for Dr. Durr's cabinet. Key number 3 is for Dr. Jones' cabinet. **Remember confidentiality is a must in our program.** Therefore, we must be sure to securely lock the cabinets before leaving. Never leave any files out. Always be sure to file them back in the cabinet.

AVAILABILITY FORMS

For the Counselor's, attached are availability forms for TABE testing and results sessions to be scheduled in September. At this time, we are expecting to have one session of each of the following (7a.m. - 12:00 noon, 3:00 p.m. - 8:00 p.m., and 11:00 p.m. - 7:00 a.m.) on two separate days. This testing will account for approximately 85 individuals. We will also need to schedule the results sessions. Please be sure to let me know your preference in scheduling, i.e., lunch hours, breaks, number of consecutive appointments, etc. Hope needs this information back by August 30, 1993.

Times Available

SUNDAY, SEPTEMBER 12, 1993

Counselor Name	12 M	1 am	2 am	3 am	4 am	5 am	6 am	7 am	8 am	9 am	10 am	11 am	12 N	1 pm	2 pm	3 pm	4 pm	5 pm
Maggie Dawson																		
Ralph Ekwall																		
Melanee Petersen																		
Mark Carta																		
Kevin Spier																		
Lisa McAloon																		

(Instructor/Teacher Assistant Availability Form)

Specify by day and time frame(s) you would consider teaching:

Sunday: ______________________________
Monday: ______________________________
Tuesday: ______________________________
Wednesday ______________________________
Thursday ______________________________
Friday ______________________________
Saturday ______________________________

How long should we consider these times and days valid? (list a date): ________

______________________________ ______________________________
Your Signature Today's Date

Specify by day the time frame(s) you would consider curriculum development:

How long should we consider these times and days valid? (list a date): ______

Sunday: ______________________________
Monday: ______________________________
Tuesday: ______________________________
Wednesday ______________________________
Thursday ______________________________
Friday ______________________________
Saturday ______________________________

______________________________ ______________________________
Your Signature Today's Date

Valmont 2000
Classroom Procedures Flowchart

Trainee Signs - in

Instructor informs trainees of any announcements

Trainee secures learning materials to begin instruction

Instructor provides direct instruction (if needed)

Trainees progress through learning module according to instructions

During last 5 - 10 minutes of training session, trainee completes daily progress log and replaces learning materials

Instructor redirects on announcements and concerns.
Session completed.

VALMONT 2000

Master List of Employees Requiring Training

NAME	DEPT.	SHIFT	NOTIFICATION	TRAINING AREAS			CLASS TIME	CLASS DAYS							INSTRUCTOR
				READING	WRITING	MATH		M	T	W	TH	F	S	SU	

Sample Packet Script

Introduce yourself.

We are going to start the TABE session by filling out some paperwork. Each of you has a packet of material in front of you. I will explain each item in order.

Before we begin any paperwork, let me explain the reason why you are taking this TABE test. Valmont 2000 is a project that is looking at jobs in the company to see what Math, Reading and Writing skills are needed for each job. The TABE test will be given to each employee to see if there are any areas in Math, Reading or Writing that you may need to brush up on.

The only people at Valmont who will see any of your test results would be the Human Resources personnel and then only on an as needed basis. No one else at Valmont has access to test scores.

You will be given an appointment card when you have completed all of the tests. This will tell you when you will need to return to the Valmont 2000 offices to receive your test results.

The "Consent Form/Release of Information" form (hold up form) signifies that we have told you about confidentiality of test results and who has access to them. This is a multi-part form; press hard when you write.

Please look at section number 1. You need to fill-in the information as indicated on the sample photocopy of the form I just gave you. Then initial this section in the blank to the left of number 1.

This item number 1 means that only Human Resources managers can have access to your test results.

Please look at the section number 2. You need to fill-in my name just like on the sample photocopy form I just gave you. Then initial this section in the blank to the left of number 2.

This item number 2 gives me permission to allow the secretary for Valmont 2000 to file the test results and also to allow the instructors to look at these results to decide what classes you may need.

Now go to the six lines at the bottom of the form. On the first line to the left, put your birthdate. On the line below it, put your social security number. (If there are objections to using a social security number, have the employee use their employee identification number followed by zeros to make a 9 digit number.) On the top line to the right print your name, on the line below this sign your name. On the last line to the right put today's date which is ________________.

Please tear off the last page which is the pink sheet. This is yours to keep for your records. Please hand in the other pages and the sample page to me.

SHREDDING

At the present time, we are looking into the feasibility of getting a Shredder. In the meantime, if you have any information that needs to be shredded, please leave it in the file in the top drawer of Dr. Durr's file cabinet for the Secretary to shred.

TABE TESTS SCHEDULE

Each group will be placed on an individual sheet - this will make it easier for you to read.

An attended column has been added on the left, to make recording simpler.

At the end of the testing session, leave the recorded sheet on the secretary's desk upside down.

The TABE box is now in the third drawer of the black lateral file in Dr. Durr's office.

TABE tests, consent forms, multipurpose surveys, etc. are to be placed in the fourth drawer of Dr. Durr's file.

TABE TESTING SCHEDULE
JULY 8, 1993

SHIPPING ICPD DEPT = 2891/J. Scheer-#3614 (Group 1 / n=13)

Attended	HOURS Administrator= Vern Peterson	NAME	SHIFT	ROO M	CLASS LENGTH	TABE TEST RESULTS SESSION			
						Date	/Total Time	/Counselor /Time	/Counselor /Name
	6:00 - 11:00 a.m.		6:00 a.m. - 2:30 p.m.	*	5 hours	7/15/93	1:00 - 1:35 p.m	1:00 - 1:15 p.m.	Mark Cart
	6:00 - 11:00 a.m.		6:00 a.m. - 2:30 p.m.	*	5 hours	8/13/93	12:10 - 12:45 p.m	No staff	M. Durr
	6:00 - 11:00 a.m.		6:00 a.m. - 2:30 p.m.	*	5 hours	Held on July 27, 1993			
	6:00 - 11:00 a.m.		6:00 a.m. - 2:30 p.m.	*	5 hours	7/16/93	6:00 -6:35 a.m.	No Staff	Ken Jones
	6:00 - 11:00 a.m.		6:00 a.m. - 2:30 p.m.	*	5 hours	7/16/93	6:40 - 7:15 a.m.	No Staff	Ken Jones
	6:00 - 11:00 a.m.		6:00 a.m. - 2:30 p.m.	*	5 hours	7/16/93	7:20 - 7:55 a.m	No Staff	Ken Jones
	6:00 - 11:00 a.m.		6:00 a.m. - 2:30 p.m.	*	5 hours	7/16/93	8:00 - 8:35 a.m	8:00 - 8:15 a.m.	Ken Jones
	6:00 - 11:00 a.m.		6:00 a.m. - 2:30 p.m.	*	5 hours	8/11/93	8:50 - 9:25 a.m.	8:50 - 9:15 a.m.	R. Ekwall
	6:00 - 11:00 a.m.		6:00 a.m. - 2:30 p.m.	*	5 hours	7/16/93	8:40 - 9:15 a.m.	8:40 - 8:55 a.m.	Ken Jones
	6:00 - 11:00 a.m.		6:00 a.m. - 2:30 p.m.	*	5 hours	7/16/93	9:00 - 9:35 a.m	9:00 - 9:15 a.m.	Ken Jones
	6:00 - 11:00 a.m.		6:00 a.m. - 2:30 p.m.	*	5 hours	8/11/93	9:15 - 9:50 a.m..	9:15 - 9:40 a.m.	R. Ekwall
	6:00 - 11:00 a.m.		6:00 a.m. - 2:30 p.m.	*	5 hours	7/16/93	9:40 - 10:15 a.m	9:40 - 9:55 a.m	Ken Jones
	6:00 - 11:00 a.m.		7:00 a.m. - 3:00 p.m..	*	5 hours	7/15/93	2:00 - 2:30 p.m.	2:00 - 2:15 p.m.	Mark Cart:

MILL OPERATORS DEPT =- 2141/D. Luedkte -#3918 (Group 2a / n= 6)

Attended	HOURS Administrator= Ken Jones	NAME	SHIFT	ROOM	CLASS LENGT H	TABE TEST RESULTS SESSION			
						Date	/Total Time	/Counselor /Time /	Counselor Name
	7:00 - 9:30 a.m.		7:00 a.m. - 5:30 p.m.	519 ENV	2 1/2 hrs	7/15/93	3:20 - 3:55 p.m.	3:20 - 3:35 p.m.	Mark Carta
	7:00 - 9:30 a.m.		7:00 a.m. - 5:30 p.m.	519 ENV	2 1/2 hrs	7/15/93	3:40 - 4:15 p.m.	3:40 - 3:55 p.m.	Mark Carta
	7:00 - 9:30 a.m.		7:00 a.m. - 5:30 p.m.	519 ENV	2 1/2 hrs	7/15/93	4:00 - 4:35 p.m.	4:00 - 4:15 p.m.	Mark Carta
	7:00 - 9:30 a.m.		7:00 a.m. - 5:30 p.m.	519 ENV	2 1/2 hrs	7/15/93	4:20 - 4:55 p.m.	4:20 - 4:35 p.m.	Mark Carta
	7:00 - 9:30 a.m.		7:00 a.m. - 5:30 p.m.	519 ENV	2 1/2 hrs	7/15/93	4:40 - 5:15 p.m.	4:40 - 4:55 p.m.	Mark Carta
	7:00 - 9:30 a.m.		7:00 a.m. - 5:30 p.m.	519 ENV	2 1/2 hrs	7/15/93	4:55 - 5:30 p.m.	4:55 - 5:10 p.m.	Mark Carta

TABE TESTING & CLASS SCHEDULING

FLOW CHART

Schedule TABE Testing/Valmont 2000 Survey

- 5 hours in one day, or
- 2 1/2 hours on two consecutive days
- Will be administered in groups of up to 30 employees

↓

- Administer TABE on scheduled day(s)
- Administer Valmont 2000 survey
- Schedule TABE test results session one week from completion of TABE test/survey

↓

Conduct TABE test results session/ follow-up survey administration

- 35 minutes per individual employee
- Develop individualized education plan
- Schedule employees for classes

↓

Conduct class based on individual employees needs

PROCEDURE FOR APPOINTMENT CARDS

Prior to the TABE Test being administered, the appointments for the results sessions are listed on the TABE Testing schedule. A copy of this schedule is located in the TABE box.

During the testing, complete the appointment cards for each individual.

Just before Test 4, appointment cards are to be distributed to each of the employees. Take a minute to ask if the scheduled time is a conflict for anyone.

If there are any conflicts, it should be noted on the TABE Testing Schedule, that an individual is unable to attend. To avoid a gap in the results sessions another individual can be moved into that time slot.
If you move the schedule around, be sure, that you make note of it on both the Testing Schedule and the individual's appointment card.

If an individual is not available, place the green appointment card and the Testing Schedule on the Secretary's desk. She will then attempt to re-schedule that individual for a later date.

Gaps in the appointments mean long periods of waiting for the counselors. The schedule would look like this.

	A NAME	7:00 am- 3:00 pm	Ron Pearson #3535 Dept. 1020	date/time/counselor
				date/time/counselor
	B NAME	7:00 am- 3:00 pm	Ron Pearson #3535 Dept. 1020	date/time/counselor
	C NAME	7:00 am- 3:00 pm	Ron Pearson #3535 Dept. 1020	date/time/counselor
	D Name	7:00 am- 3:00 pm	Ron Pearson #3535 Dept. 1020	date/time/counselor
	E Name	7:00 am- 3:00 pm	Ron Pearson #3535 Dept. 1020	date/time/counselor
				date/time/counselor
	G Name	7:00 am- 3:00 pm	Ron Pearson #3535 Dept. 1020	date/time/counselor
	H Name	7:00 am- 3:00 pm	Ron Pearson #3535 Dept. 1020	date/time/counselor

By handing out the appointment card early in the testing session, you will have an opportunity to move the schedule around. Name H could be filled into the second line and name G could be moved into the fifth line. This will help not only the Counselor holding the results session, but also the Secretary.

There will always be some "no-shows", and some cancellations, but hopefully taking a few minutes with the individuals during the testing session will prevent some of these situations from happening.

RESULTS SESSIONS

The files have been moved to the black lateral file in Dr. Durr's office. They are in the second drawer.

Files will not be compiled by Hope prior to the TTRS. Instead, all individuals who have not had their results session will be in alphabetical order in the front of the drawer. Individuals who have been completed will be placed in alphabetical order by department in the back of this drawer. **BE SURE TO REFILE COMPLETED TTRS FILES IN ALPHABETICAL ORDER WITHIN THE DEPARTMENT. PLACE THE "NO SHOWS" IN THE FRONT OF THE FILE IN ALPHABETICAL ORDER.**

On the inside of the second file drawer, there is a diagram of how the files are to be organized. When you pull and replace the file, the contents should be in order as diagrammed. **(PLEASE NOTE THAT THE TEST RESULTS ARE TO BE STAPLED TO THE IEP. IF YOU NEED A STAPLER DURING YOUR RESULTS SESSIONS, EITHER USE THE ONE ON THE FRONT DESK, OR ASK THE SECRETARY.)**

VALMONT 2000 ORIENTATION

Teacher Assistant Timelines for Training and Orienting

1. .5 for process review/paper work. This time will be for instructing the Teacher Assistant how to complete the many forms we will be using for time allocation and general employment forms (I-9, w-2). Time will be kept on a log sheet, as well as a time card, so that we can indicate when time was actually spent with students, class preparation, and when time was spent for training and orienting. Paper work will also involve any additional reading material on being a successful Teacher Assistant.

2. 1.0 hours for formal orientation with Margaret Durr. Margaret will introduce the program and it's mission to each new Teacher Assistant. This will also include a tour of the Valmont 2000 area such as the staff offices, where classes are taught, where staff meetings are held, any equipment that is used, such as the Interactive Video Program, and E-Mail Computers. The tour will also include a general tour of the Cafeteria, and also the parking facilities (where not to park). We will also need to tour the Loading Dock area to show the Teacher Assistant how to gain entrance into the building after hours.

3. 2.0 contact hours for class orientation. This will encompass meeting the teacher before class, having the teacher explain his/her needs, observing the students and teacher at work, and answering any questions after class.

4. 2.0 hours to orient on the Interactive Video Machine. Nancy Conrad will be training all Teacher Assistants on how to use the machine. This will be necessary so that the Teacher Assistant can help the students if they need assistance in running the program. Nancy will have a 2 hour session for several Teacher Assistants at a time if possible. The Interactive Video takes at least one hour to go through the Teacher Assistant portion. Another hour is allotted for other aspects of the program and letting the Teacher Assistant work on her/his own until she/he feels comfortable with the program.

5. 1.5 hours for E-Mail training. The Teacher Assistant will be taught how to use E-Mail with Pat Fiedler of Valmont Industries.

6. 1.5 hours for Tour of Valmont Industries, Inc. with Larry Watski of the safety department. Safety hats and glasses will be required while on the tour. All Teacher Assistants will be asked to dress appropriately and wear comfortable shoes. The tour will encompass the entire outside areas of Valmont Industries.

Total hours of orientation training will equal 8.5 contact hours. Those Teacher Assistants used from Metropolitan Community college have an additional 8 hours of orientation that was required of them when they were initially employed by Metro as Teacher Assistants. Teacher Assistants coming from Midland Lutheran College also have gone through several hours of orientation training to become Teacher Assistants at Midland's Facilities.

VALMONT 2000 PROGRAM

TEACHER ASSISTANTS FACT SHEET

The Valmont 2000 Teacher Assistant program is now seeking eligible individual/group Teacher Assistants. The rate of pay is $7.00 per hour. The hours per week may vary from 3-15 hours. Duties and responsibilities will include the following:

1. Provide group or individual teaching assistance in basic skills areas: reading, writing, computation, or solving specific Valmont related work problems, writing E-Main messages, reading reference materials, completing hazard reports, etc.
2. Assist students in the Valmont Learning Center with computer assisted learning.
3. Serve as a support and resource person to participants requiring special accommodations for learning disabilities.

To become a Teacher Assistant in the Valmont 2000 Program you must have the following qualifications:

1. Be willing to work with other adult learners who have academic or special needs;
2. Demonstrated academic proficiency;
3. Secure two (2) letters of recommendation from the local community as to academic and character references if requested. Must not be relatives of Valmont employees active in the program;
4. Be willing to adhere to schedules in a timely manner;
5. Be willing to submit reports as directed;
6. Be an individual of high standards and personal integrity;
7. Be willing to attend in-service training and related meetings;
8. Be academically proficient to move a student from academic deficiencies to academic successes;
9. Be willing to evaluate students progress and similarly to be evaluated;
10. Have an acceptable GPA (3.0 or higher preferred) and/or demonstrated subject matter expertise;
11. Be familiar with microcomputers and computer assisted learning;

Table 6

ITEM CLASSIFICATION FOR TABE 5 AND 6, LEVEL D

TEST	CATEGORY OBJECTIVE Subskill	THINKING SKILL					
		Recall and Recognition		Inference		Evaluation	
		Form 5	Form 6	Form 5	Form 6	Form 5	Form 6
Test 1 Vocabulary	1 Synonyms	1–7	1–7				
	2 Antonyms	8–11	8–11				
	3 Homonyms	12–15	12–15				
	4 Affixes	16–19	16–19				
	5 Words in Context			20–30	20–30		
Test 2 Comprehension	6 Passage Details						
	who		30				
	what	19, 32, 38	1–4, 7	8, 10	10, 19	24	
	where		23				
	when, sequence	3, 15, 30	8				
	7 Character Analysis						
	feeling				31		
	motive		25	14, 26	13		
	trait			13, 28	11		
	8 Central Thought						
	main idea			7, 17	20, 22, 29		
	author purpose			5, 9, 31, 36		29	
	author viewpoint			23, 40	12, 27, 35, 36		
	9 Interpreting Events						
	conclusion	1		2, 12, 18, 27	26, 28, 38		
	cause, effect	25	32	35	24		
	predict outcome				5, 33, 40	16	
	10 Forms of Writing						
	fact, opinion					6, 33	6, 34, 37
	fact, fiction			39			
	11 Writing Techniques						
	figurative techniques	20, 21		11	9, 14–18, 21, 39	22, 34, 37	
	persuasive techniques			4			
Test 3 Mathematics Computation	13 Addition of Decimals	8, 19, 21, 23	5, 7, 15, 17				
	14 Addition of Fractions	3, 6, 25, 33	4, 24, 26, 32				
	16 Subtraction of Decimals	10, 17, 24, 32	1, 13, 16, 28				
	17 Subtraction of Fractions	4, 26, 28, 36	11, 18, 27, 40				
	18 Multiplication of Whole Numbers	9, 11, 15, 30	3, 8, 10, 12				
	19 Multiplication of Decimals	2, 7, 22, 27	6, 9, 25, 41				
	20 Multiplication of Fractions	12, 34, 37, 39	22, 30, 34, 37				
	21 Division of Whole Numbers	1, 13, 18, 20	2, 14, 19, 21				
	22 Division of Decimals	5, 14, 16, 44	20, 23, 36, 38				
	23 Division of Fractions	29, 31, 35, 38	29, 31, 33, 35				
	24 Integers and Per Cents	40, 42, 47	39, 43, 47	45	45		
	25 Exponents and Algebraic Expressions	41, 43, 46, 48	42, 44, 46, 48				

Table 6 (continued)

ITEM CLASSIFICATION FOR TABE 5 AND 6, LEVEL D

TEST	CATEGORY OBJECTIVE Subskill	THINKING SKILL					
		Recall and Recognition		Inference		Evaluation	
		Form 5	Form 6	Form 5	Form 6	Form 5	Form 6
Test 4 Mathematics Concepts and Applications	26 Numeration						
	comparisons	7	14				
	expanded notation	6	26				
	place value	21	3				
	rounding	20	16, 38				
	estimating			24, 34	29		
	number lines			9, 17	9, 28		
	exponential notation	3	7				
	27 Number Sentences						
	missing elements			10			
	ratio and proportion			32	39		
	unknowns			30	6, 34		
	inequalities					37	33
	28 Number Theory						
	properties		2	26			
	divisibility	8	8				
	multiples			19	15		
	equivalent forms	5, 36			17, 30		
	29 Problem Solving						
	pre-solution			16		15	19, 21
	one-step			11, 25	5, 18, 20		
	multi-step					18	
	per cents			33	37		
	logic, Venn diagram			14			
	graphs	1, 2	11, 12	27–29	10, 23, 24		
	probability, statistics				27		
	30 Measurement						
	time			23	36		
	length	13		4			
	mass			22			
	capacity				4		
	temperature				25		
	perimeter				31		
	area				40	38	
	volume			35	22		
	31 Geometry						
	points, lines, segments, rays		35			31	
	angles		13	40			
	parts of circle		32			12	
	Pythagorean theorem, coordinate geometry			39	1		
Test 5 Language Mechanics	Capitalization						
	32 Pronoun *I*, Nouns, Adjectives	1, 3, 6, 8	1, 3, 5, 6				
	33 Beginning Words, Titles	2, 4, 5, 7	2, 4, 7, 8				
	Punctuation						
	34 Period, Question Mark, Exclamation Point	10, 11, 13	9, 14, 16	19	18		
	35 Comma, Colon, Semicolon, Quotation Marks	9, 12, 14–17	10–13, 15, 17	18, 20–22	19–22		

Table 6 (continued)

ITEM CLASSIFICATION FOR TABE 5 AND 6, LEVEL D

TEST	CATEGORY OBJECTIVE Subskill	THINKING SKILL: Recall and Recognition		Inference		Evaluation	
		Form 5	Form 6	Form 5	Form 6	Form 5	Form 6
Test 5 Language Mechanics (continued)	Capitalization and Punctuation						
	36 Proofreading						
	letter parts			27	30		
	end mark/beginning capital			24, 26, 29	25, 28, 29		
	comma			28	23		
	nonessential capitalization/punctuation			23, 25, 30	24, 26, 27		
Test 6 Language Expression	Usage						
	38 Pronouns						
	personal	1, 3, 9	1, 4, 5				
	relative	14	10				
	39 Verbs						
	agreement	4, 13	9, 12				
	tense	5, 7, 10	3, 8, 13				
	40 Adjectives, Adverbs						
	modifier/adjective	8, 11	6, 11				
	modifier/adverb	2, 6, 12	2, 7, 14				
	Sentence Structure						
	41 Sentence Recognition			17-22	17-22		
	Paragraph Development						
	43 Sentence Combining						
	connective, transitional			15, 16	15, 16		
	compound predicate			26, 29	23, 29		
	compound subject			24, 27	24, 25		
	add phrases, clauses			23, 25, 28	26-28		
	44 Topic Sentence						
	identify					30-32	30-33
	develop					33-36	34-36
	unrelated sentence					37-39	37-39
	45 Sentence Sequence			40-45	40-45		
Test 7 Spelling	46 Vowel Sounds						
	digraphs	2, 15, 17	14, 21, 25				
	diphthongs	3	12				
	r-controlled	10, 22	10, 16				
	schwa	1, 25, 27, 30	15, 19, 20, 28				
	irregular spellings	23, 28	9, 23				
	47 Consonant Sounds						
	variant letter and letter combinations	4, 6, 8, 18, 21	4, 6, 7, 17, 26				
	silent letters	5, 19, 26	2, 11, 13				
	48 Structural Units						
	affixes	12, 14, 20, 24	1, 3, 5, 29				
	homonyms	9, 16	18, 22				
	compounds	7	27				
	similar word parts	11, 13, 29	8, 24, 30				

VALMONT 2000

INDIVIDUALIZED EDUCATIONAL PLAN/CAREER PLANNING

DATE: ____________________

EMPLOYEE NAME: ____________ SSN: ____________ EMPLOYEE ID #: ____________

DEPT.: ________ JOB TITLE: ________ BUS PHONE: ________ HOME PHONE: ________

STREET ADDRESS: ____________ CITY: ____________ STATE: ______ ZIP: ______

EDUCATIONAL DATA - (check all that apply)

________ High School Diploma Year Acquired ____________________

________ GED Year Acquired ____________________

________ College/Post Secondary Study

Name(s) of College(s) You Have Attended ____________________

____

________ No Degree Study Area: ____________ Date: ________

________ Associates' Degree Study Area: ____________ Date: ________

________ Bachelor's Degree Study Area: ____________ Date: ________

________ Master's Degree Study Area: ____________ Date: ________

ASSESSMENT DATA

______ Test of Adult Basic Education (TABE) results attached to IEP.

______ Required Competencies by Job Title (On File)

______ Other Assessments (Please Specify):

____

____

____

____

____

____

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LIST OF COMPETENCIES IN NEED OF IMPROVEMENT:

	Start Date	Date Mastered		Start Date	Date Mastered

CAREER PLAN

Educational Plan - (Check all that relate to the Employee):

	LEVEL	STUDY AREA(S)	SCHOOL NAME	START DATE
____	On-the-job Training	____________	________________	____________
____	Skill Upgrading/Development	____________	________________	____________
____	Vocational Certificate	____________	________________	____________
____	Associate's Degree	____________	________________	____________
____	Bachelor's Degree	____________	________________	____________
____	Master's Degree	____________	________________	____________
____	Competency-Based Credit	____________	________________	____________
____	CLEP Testing	____________	________________	____________

IEP/CAREER PLAN REVIEW

Date: ____

______ has met objectives ______ has shown improvement ______ additional intervention (please specify):

____

____

____

____

____

____

Employee's Signature: ______________________________ **Date:** ______________________

Counselor's/Instructor's Signature: ______________________________ **Date:** ______________________

ADDITIONAL COMMENTS

Employee Name: ____

Additional Information (from IEP Career Plan Review)

APPENDIX F8

Distance Learning Action Team Summary Report

The Distance Learning Action Team met to identify the feasibility of integrating distance learning into the Valmont 2000 curriculum. The following factors were considered:

1. The profile of the students academic achievement level..
2. The equipment needs requirement and accompanying costs.
3. A plan for implementing a distance learning program.

At the present time, participants within the Valmont 2000 program generally are not at the desired educational level to profit from distance learning classes offered through Metropolitan Community College, Nebsat, and Corpnet, . . The team felt that the present courses would not be appropriate for beginning students. Therefore, success of the basic literacy program would be a requirement before the investment of time and monies into establishing a distance learning site.

In addition to student needs, location, equipment costs should be considered. The cost of utilizing outside facilities would be much less given that Valmont's location is near Metropolitan Community College's Fremont and Elkhorn campuses (a travel time of less than 15 minutes) as compared to the equipment purchase costs (see Appendix) Therefore, Valmont would incur less expense by utilizing MCC's Distance Learning facilities. The only cost to Valmont would be the employee's time away from the job. Using existing facilities would also allow the students to participate with other classmates (outside of Valmont) which would enhance their learning experience.

Finally, as the students develop their academic skills and Valmont Industries' training needs grow, a more specific plan of implementation of an on-site distance learning facility may be initiated. The steps to implement a distance learning program is outlined in Appendix.

10/26/94

APPENDIX

EQUIPMENT COSTS

Equipment would be acquired from vendors to include the following:

2 ITFS antenna	*$800.00 each*
2 ITFS down converters	*$450.00 each*
1 cable, connectors, etc.	*$100.00*
2 antenna mounts	*$75.00*
1 telephone conf. unit	*$700.00*
5 additional microphones	*$100.00*
1 equipment/monitor cart	*$500.00*
1 large screen tv - 35"	*$800.00*
l vcr	*$300.00*
1 fax machine	*$800.00*
Total	*$4625.00*

10/26/94

DISTANCE LEARNING IMPLEMENTATION STEPS

Step 1: **Conduct path or engineering survey to obtain feasibility of distance learning link.**

Step 2: **Apply for microwave license, work with legal department to complete necessary paperwork.**

Step 3: **Research feasibility of cable hookups**

Step 4: **Upon receipt of license, begin pricing on cost of equipment needed to support distance learning.**

Step 5: **Purchase necessary equipment, begin installation.**

Step 6: **Train Facilitator for on site job expectations.**

Step 7: **Release information to employees as to availability and requirements.**

Step 8: **Receive request for additional training from employee.**

Step 9: **Review possible needs/solutions with HR managers, supervisors and requestees**

Step 10: **Organize and enroll future students.**

Step 11: **Begin distance learning classes.**

10/26/94

EXTERNAL EVALUATION REPORT

Valmont 2000

Objective 1: To provide through August 1994, an effective plan of management to ensure the proper and efficient management of the Valmont 2000 Program.

This project has been exceptionally well managed from beginning to end. The management strategies used by Dr. Margret Durr and Dr. Ken Jones have been very effective and should be a significant part of the lessons to be shared from this project. Metropolitan Community College and Valmont Industries have contributed extensive support and expertise to the management of the project. This has been a truly successful team effort. See attachment A

Objective 2: To recruit and enroll through the 18 month project period, 350 participants and to provide 100% of the participants workplace skills development activities and services to ensure attainment of literacy and other workplace basic skills essential to successful placement, continued employment, advancement in careers, and increased productivity.

This goal was met or exceeded. See attachment B

Objective 3: Conduct job task/literacy analysis for 25 job titles in 12 job groups to determine needed basic skills training/needed curriculum adjustments per designated job task area in ongoing process through August 1994.

This goal was met or exceeded. See attachment C

Objective 4: Design and implement, through August 1994, individualized learning plans for 100% of Valmont employees with identified deficits to bridge the gaps found between skills of employees and on-the-job requirements.

This goal was met. (See attachment D) Basic skills training was scheduled for all shifts.

Objective 5: To develop and provide, through August 1994, performance based workplace specific skills training curriculum based upon job task analysis and cooperatively planned by Valmont employees and Valmont 2000 Project.

The curriculum development process used by this Curriculum Action Teams is a model for continuous improvement efforts. The attached Learning Guides (attachment E) are representative of materials used in basic skills instruction. The objective was met.

Objective 6: To provide, through August 1994, Valmont 2000 instructional support services and activities through the Valmont Development Center for 350 of Valmont 2000 participants.

Instructional resources, equipment and support services are in place. Support for participants with learning disabilities was outstanding. This objective was met.

Objective 7: Develop and implement, through August 1994, Valmont 2000 mentoring program to assist new and/or current employees requesting mentors acquire essential basic or technical skills needed to start a new job or to learn a new technique or technology on the job.

This objective was met. The mentors handbook and training sessions are well-designed and based on evaluations well-received. See attachment F

Objective 8: To provide through August 1994, a Valmont 2000 tutorial program to assist employees with special learning needs successfully achieve literacy goals.

The teacher assistant program is in place and based on observation a valuable support for participants who need extra attention or need to be brought up to speed due to absences. This objective was met. See attachment G

Objective 9: To provide, through August 1994, Valmont 2000 optional delivery systems for workplace skills development curriculum, workshops, and seminars via distance learning technology including satellite down-link nationally/internationally, telecourse instruction, and computer assisted/interactive video learning systems.

While this objective was not implemented, the team completed an analysis of the costs of integrating distance learning at the Valmont site. It was determined that current participants were not at adequate educational levels to profit from distance learning classes currently available.

Objective 10: To provide, through August 1994, mechanisms for continually monitoring participants' performance and maintaining Project files, data and reports.

This objective was met.

Objective 11: To evaluate, through August 1994, the progress of the Valmont 2000 program through the use of evaluation measures that assess the degree to which the Project objectives have met the criteria.

Evaluation measures were comprehensive and results are impressive. The participant gain information is of particular interest in demonstrating the effectiveness of the project. See attachment H

EMAIL TRAINING

VALMONT EXPENDITURE

PER SESSION 10 hours of prep time.
1 1/2 hours of training per class session

$15.00 per hour (Valmont employee salary and benefits)

$45.00 approximately per class session.

COSTS PER CLASS
Suggested Contract Amounts
Second Grant Period

INSTRUCTORS

8 hours	Curriculum Development
16.5 hours	Preparation Time
24 hours	Instructional Time
16 Hours	Staff Meetings
2 hours	Evaluation
1.5 hours	Instructor Evaluation
8 hours	Staff Development
.75 hours	File Review

76.75 hours x $12.70 per hour = $974.73
43.25 hours x $12.70 per hour = $549.28 (class costs)
33.50 hours x $12.70 per hour = $425.45 (Instructor Costs)

If you assume each instructor teaches an average of three classes, the Instructor costs could be dispersed over the three class costs, (141.82 per class) bringing the **average class costs to $691.10 per class.**

TEACHER ASSISTANTS

24 hours	Classroom Assistance
4 hours	Preparation Time
28 hours	**$196.00 per class**

TEACHER ASSOCIATES (This individual will work unsupervised in the classes, and report to the Full Time Instructor for guidance and lesson planning)

24 hours	Classroom Instruction
16.5 hours	Preparation Time
8 hours	Meeting Time
48.5 hours	**$436.50 per class**

(The Teacher Associate would be paid at the higher rate of $9.00 to compensate them for their skills and abilities in directing the class without supervision.)

Attachment

A

PROGRAM COSTS

PROGRAMMATIC COSTS

Overall

READING	18 classes	$22,368.42
WRITING	37 classes	$45,979.53
MATH	35 classes	$43,494.15
Session 1	11 classes	
Session 2	18 classes	
Session 3	9 classes	
Session 4	14 classes	
Session 5	38 classes	

ACTUAL EXPENSES THUS FAR	**$ 93,232 (Instructors - Days)** **$ 4,626.83 (Instructors - Nights)** **$ 6,680.30 (Tutors)**
TOTAL	**$104,539.03**
PROJECTED COSTS TO END OF GRANT	**$ 16,000.00**
TOTAL COST	**$111,842.14**
COST PER CLASS	**$ 1,242.69***
COST PER HOUR (BASED ON 24 CONTACT HOURS PER CLASS)	**$ 51.77**

*** Does not include administrative costs (i.e., Program Director, Secretarial Staff, Evaluation Team)**

EVALUATION/FINAL REPORT COSTS EXPENDED TO DATE	**$ 6,482.69**
COUNSELING COSTS	**$ 9,762.67**
PER INDIVIDUAL (Counseling and Testing)	**$ 21.80**

COST PER CLASS PER STUDENT

$111,842.14	**581 (# of students)**	**$ 192.50**

COST PER CLASS PER INDIVIDUAL

$111,842.14	**356 (# of individuals)**	**$ 314.16**

COSTS FOR JULY

# of people served: **195 (continual enrollment)**
Reading - 24 class participants
Writing - 84 class participants
Math - 87 class participants

# of hours incurred by Valmont 2000 staff
1441.25

Cost by Subject	Reading	($4198.76) $3316.86
	Writing	($7872.67) $6219.11
	Math	($7872.67) $6219.11

Numbers outside the parenthesis do not include administrative costs. These are class costs only, i.e., Instructors, Night Instruction, Tutoring, Lesson Planning, etc.)

Session 5 is running approximately 22% higher in class costs, due to the larger number of class sessions being offered.

PART TIME STAFF LOG
DESCRIPTION OF DUTIES

In order to meet the documentation requirements of the grant, the duties for the part time staff must be explicitly logged in such a way that the time required for each separate duty is clearly identified. As a result, we would like you to use the following duty descriptions to classify your activities and record them as such on your activity logs. You need to review previous time cards so that the time you have already submitted will be identified according to the descriptions listed below. The duty descriptions you should utilize are as follows:

DUTY	DUTY DESCRIPTION
Curriculum Development	**(Instructors Only- 1 hour per week)** Duties classified under this category include initial development of curriculum for use during classroom instruction. This is defined as the development time required for the initial preparation of the class. When you have developed classroom materials which are to be used for the first time during the classes, your time would be recorded under this activity. Examples: Development time for putting together the first writing lesson plan, development time for the pre-test in Math to be given for the first time. Currently curriculum development is used to add 12 workplace problems to the existing curriculum, and minor changes and modifications made after shop visits.
Preparation Time	**(Instructors Only- 45 minutes per class, except week 1,5, and 8 then 1 1/2 hours is allowed per class)** Duties classified under this category include re-reading, updating or making modification to existing lecture notes, lesson plans, assessment tools prior to teaching the class, and meetings with Teacher Assistants. Arranging for cassette players or other AV equipment, sharpening pencils, grading papers, and obtaining supplies for the class are other duties under this classification.
Classroom Instruction	**(Instructors and Teacher Assistants- 1 1/2 hours per class)** Duties classified under this category include actual time spent in the classroom. The duties of TABE testing will be included under this classification.
Skills Assessment Team	**(Instructors and Job Analysts only- 0 hours - by prior approval only)** Duties classified under this category include meetings of the team to determine reading and writing grade equivalencies and review of job specific video tapes and job analysis documents to be utilized in making skills assessments at the request of the job analyst.
Staff Meeting	**(All staff when requested - 2 hours per week)** Duties classified under this category include attendance and participation in scheduled meetings of the Part Time Instructor Staff. This is listed under "Other" on the Part time Instructor Staff Activity Log
Instructional Time:	**(Teacher Assistants - 15 minutes per class)** This will include any additional time up to 15 minutes per class for any instructions given by the instructor before or after class.
Training:	**(All staff, however prior approval must be received)** Duties under this classification include any training done on E-Mail, Interactive Video, and any other computer work, however, you must document the exact training being done (E-Mail, Interactive Video, etc).
Orientation	**(All new employees as scheduled-3 hours)** Duties performed under this classification include time spent outside of class for tours, paperwork for staff (payroll, employment forms, and going over orientation material with staff). Again, this must be documented accurately, and be specific as to what type of orientation is being performed. This will also include your initial class orientation for the first day of class.
CAT Teams	**(Instructors Only- 0 hours)** This classification is for the activities of the Action Teams designed for curriculum development. Currently any hours used under this classification must have prior approval.

Action Teams	**(All Staff as assigned - 0 hours)** This will include any additional time spent on the Action Team assignments. Currently any hours used under this classification must have prior approval.
Student Evaluation	**(Instructors- 2 hours per session)** This classification is for the evaluation of student files, the preparation of IEP, and the completion of certificates.
Instructor Evaluation	**(Instructors - 1 1/2 hours per session)** This classification is for the evaluation of instructors, peer evaluations and feedback sessions on performance. Other observation time, re-training time is not an allowable expense, and will not be accepted for payment on a time card.
Travel Time	**(Instructors and Counselors - 1/2 hour per day)** This classification is for the travel time from the closest MCC campus to Valmont. Expenditures will be for one trip per day only. All other travel must be approved by the Project Director prior to being submitted for payment.
Staff Development	**(Instructors and Counselors - 4 hours per month)** This classification involves the project staff in professional development activities. Staff Development activities may include workshops on EPIC, Valmont tours arranged by the Job Analyst, Job shadowing, etc. All staff development activities must be approved by the Full Time Instructor prior to participation.
Mentoring	**(Mentoring Coordinator - 0 hours - by prior approval only)** The duties of the mentoring coordinator is to review with the mentors problems or concerns that are being addressed by the mentors. This contact will be provided by phone or through e-mail. All time must be approved by the Project Director.
TABE Administration	**(Counselors-5 hours per session)** Duties include the administration of the TABE initially.
TRS	**(Counselors-35 minutes per session)** Duties include the individual meetings with potential students.
Review Files	**(Counselors - 45 minutes before each session)** This classification will include reviewing the files with the Full Time Instructor to determine class requirements for future students.
Review Files	**(Instructors - 45 minutes before each session)** This classification will include reviewing the files prior to the first day of class.
Special Requests	**(All staff - 0 hours - by prior approval only)** The items listed under this classification would require an additional hours approval form be submitted prior to initiating the activity. These items include: one to one instruction, IEP conferences for students, working with students on additional training, additional tutoring sessions, conferences with the Teacher Assistant. Any other duties which do not fall into a category listed above should follow the steps for approval as a special request.
Work away from Program	**(All staff - 0 hours - by prior approval only)** All duties which require performance of the job duties away from the Valmont 2000 facility, will require prior approval by both the Valmont 2000 Project Director and the Full Time Instructor.

NATIONAL WORKPLACE LITERACY PROGRAM
INFORMATION FORM

Part 1: Program Parameters

1. Target No. to be Served: 350

2. No. Served at Each Site to Date:

Site 1.	435*	Site 6.	
Site 2.		Site 7.	
Site 3.		Site 8.	
Site 4.		Site 9.	
Site 5.		Site 10.	

3. Total No. Served: 435*

4. Fed. Funds Obligated: $270,837.00

5. Matching Funds/ In-Kind: 47,571.30

6. Value Release Time: $283,500.00

7. No. Participating in Programs Offered:

Basic Skills 435*
GED
ESL

8. Contact Hours Provided: 10,440

(Contact Hours are the number of teaching hours that workers receive)

Part 2: Participation Data

1. Mean Age Participants: 37.04

2. Sex: No. Males 339 No. Females 20

3. Race/ Ethnicity: No. who are:

White 341
Black 7
Hispanic 5
Am. Indian/ Alaska Native 3/0
Asian/Pacific Islander 1
Other 2

4. No. Single Head of Household: 139

5. No. Limited English Proficient: 3

6. Outcomes **

Outcomes	No. Participants
a. Tested higher on basic skills	
b. Improved communication skills	
c. Increased productivity	
d. Improved attendance at work	
e. Increased self-esteem	

7. Years with the company

Years with the company	No. Participants
Unemployed	0
0-5	114
6-10	44
11-15	80
16-over	121

*This number indicates the number of class participants. One individual could possibly be enrolled in one or more classes, thus inflating the number higher than the 359 total shown elsewhere on this page.

**This information will be included in the final report.

Attachment

B

STATISTICAL UPDATE

VALMONT INDUSTRIES
VALMONT 2000 REPORT
1st Grant Report
August 30, 1994
Shop Employees

1.) Jobs Analyzed	# of Positions Analyzed
IRRIGATION	27
ICPD	23
TOTAL	50

2.) TABE Report	# of Positions Analyzed
IRRIGATION	262
ICPD	180
TOTAL	442

3. Time and Dollars Invested by Session*

SESSION ONE October 11, 1993 - January 4, 1994	# of Employees	# of Participants	# of Class Units	# of Hours	$ Invested
ICPD	22	26	416	832	$16,640
IRRIGATION	59	57	912	1824	$36,480
TOTALS	81	83	1328	2656	$53,120

SESSION TWO January 10 - March 4, 1994	# of Employees	# of Participants	# of Class Units	# of Hours	$ Invested
ICPD	44 (66)•	54	864	1728	$34,560
IRRIGATION	50 (109)•	69	1104	2208	$44,160
TOTALS	94 (175)•	123	1968	3936	$78,720

SESSION THREE March 7 - April 29, 1994	# of Employees	# of Participants	# of Class Units	# of Hours	$ Invested
ICPD	15 (81)•	44	704	1408	$28,160
IRRIGATION	2 (111)•	2	32	6432 -	$ 1,208
TOTALS	17 (192)•	46	736	1472	$29,368

SESSION FOUR May 2 - June 24, 1994	# of Employees	# of Participants	# of Class Units	# of Hours	$ Invested
ICPD	25 (106)•	29	624	1249	$24,960
IRRIGATION	47 (158)•	93	1488	2976	$59,520
TOTALS	72 (264)•	132	2112	4224	$84,480

SESSION FIVE July 5 - August 26, 1994	# of Employees	# of Participants	# of Class Units	# of Hours	$ Invested
ICPD	47 (153)•	99	1584	3168	$63,360
IRRIGATION	45 (203)•	98	1568	3136	$62,720
TOTALS	92 (356)•	197	3152	6304	$126,080

***Numbers do not take into account absenteeism and tests out (Early Completion).**

****Session Five is a projection based on activity during the first 2 week time frame in July.**

•Numbers shown in parenthesis are a cumulative total of the individuals who may be included in classes as sessions progress.

HOW MANY INDIVIDUALS NEEDED ONE CLASS:

TOTAL	**127**
ICPD	57
IRRIGATION	70

HOW MANY INDIVIDUALS NEEDED TWO CLASSES:

TOTAL	**175**
ICPD	77
IRRIGATION	98

HOW MANY INDIVIDUALS NEEDED THREE CLASSES:

TOTAL	**86**
ICPD	30
IRRIGATION	56

*NUMBER OF EMPLOYEES REQUIRING READING: 13%

TOTAL	87
IRRIGATION	54
ICPD	33

*NUMBER OF EMPLOYEES REQUIRING WRITING: 51%

TOTAL	345
IRRIGATION	206
ICPD	139

*NUMBER OF EMPLOYEES REQUIRING MATH: 36%

TOTAL	240
IRRIGATION	143
ICPD	97

*Please note one employee may be enrolled in 1, 2, or 3 classes.

Attachment

C

JOB ANALYSIS TIMELINE

PROPOSED JOB ANALYSIS TIME LINE

Pre-Job Analysis Administrative Tasks

Number	Activity	Status	Estimated Completion
1	Establish a standardized job-analysis procedure.	Complete	June 1993
2	Develop a job-analysis flow chart which summarizes standardized job-analysis procedure.	Complete	June 1993
3	Develop a sample job-analysis product.	Complete	June 1993
4	Present an overview of the standardized job-analysis procedure, flow chart, and sample product to Human Resources Department representatives for their approval and modify if required.	Complete	July 1993
5	Develop a job-analysis interview guide and job-analysis scheduling form.	Complete	July 1993
6	Select and order a survey and test of cognitive abilities	Complete	July 1993
7	Develop rating scales to assess the frequency and importance of job tasks.	Complete	July 1993

Review Phase I Data Transmittal Sheets and Revise as Necessary

Number	Activity	Status	Estimated Completion
8	Shipper B-Stager, Loader, Outside (2891)	Complete.	May, 1994
9	Shipper B-Inside Packer (2891)	Complete	May, 1994
10	Submerged Arc Base Welder (2151)	Complete	May, 1994
11	Material Handler (1010)	Complete	May, 1994

Review Phase I Data Transmittal Sheets and Revise as Necessary (Continued)

Number	Activity	Status	Estimated Completion
12	Welder B (1020)	Complete	May, 1994
13	Galvanizing Acid Reclamation Operator B (1100)	Complete	May, 1994
14	Retread Machine Operator B (1170)	Complete	May, 1994
15	Small Diameter Mill Operator (2141)	Complete	May, 1994
16	Small Diameter Mill Trainee B (2141)	Complete	May, 1994
17	Cut-Off Operator (1100)	Complete	May, 1994
18	Small Diameter Mill Team Leader (2141)	Complete	May, 1994
19	Paint Associate (2064)	Complete	May, 1994
20	Machine Operator (1100)	Complete	May, 1994
21	Galvanizing Crew Leader (1100)	Complete	May, 1994
22	Welder C - Irrigation (1020)	Complete	May, 1994
23	Galvanizing Acid Reclamation Operator A (1100)	Complete	May, 1994
24	Galvanizing Bridge Crane Operator (1100)	Complete	May, 1994
25	Forklift Operator (1020)	Complete	May, 1994
26	Set-Up Technician (1100)	Complete	May, 1994
27	Small Diameter Mill Operator Assistant(2141)	Complete	May, 1994
28	Welder B (2151, 2062, 2063)	Complete	May, 1994

Phase II Job Analyses

Number	Job Analysis	Status	Estimated Completion
31	Slitter Machine Operator Leadman (2085)	Complete	September 1993
32	Slitter Machine Operator (2085)	Complete	September 1993
33	Slitter Machine Operator Trainee A (2085)	Complete	September 1993
34	Slitter Machine Operator Trainee B (2085)	Complete	September 1993
35	Big Wheel Operator (1050)	Complete	September 1993
36	Gearbox Machine Operator (1050)	Complete	September 1993
37	Gearbox Machinist A (1050)	Complete	October 1993
38	Gearbox Assembler A (1050)	Complete	October 1993
39	Gearbox Assembler Trainee A (1050)	Complete	October 1993
40	Gearbox Assembler B (1050)	Complete	October 1993
41	Electrical Assembly Technician (1070)	Complete	December 1993
42	Electrical Assember A (1070)	Complete	December 1993
43	Electrical Assembler B (1070)	Complete	December 1993
44	Brake Press Operator (2151)	Complete	January 1994
45	Brake Press Helper (2151)	Complete	January 1994
46	Shear Operator (1010)	Complete	January 1994
47	Brake Press Operator (1010)	Complete	January 1994
48	CNC Angle Process Operator (1010)	Complete	January 1994
49	CNC Brake Press Operator 1010)	Complete	January 1994
50	Tapered Tube Former (2062)	Complete	January 1994

Phase II Job Analyses (Continued)

Number	Job Analysis	Status	Estimated Completion
51	Custom Fitter (2151)	Complete	April 1994
52	Shipper A Outside (1212, 1213)	Complete	April 1994
53	Shipper B Outside (1212, 1213)	Complete	April 1994
54	Welder C (2151, 2062, 2063, 2061)	Complete	May 1994
55	Maintainer B and C (2852, 2084)	Complete	May 1994

MINIMUM STANDARD

592

Valmont 2000 Job Description List

	AREA	READING	WRITING	MATH
1.	Shipper B-Stager, Loader, Outside (2891)	N/A*	2	blueprints*
2.	Shipper B- Inside Packer (2891)	N/A*	2	blueprints*
3.	Submerged Arc Base Welder (2151)	11.5	2	blueprints*
4.	Paint Associate (2064)	11.0	2	
5.	Material Handler (1100)	10.5	2	fractions, blueprints*
6.	Machine Operator (1010)	11.0	2	blueprints*
7.	Welder C (1020)	11.5	2	blueprints*
8.	Welder B (1020)	11.5	2	blueprints*
9.	Welder A (1020)	N/A**	N/A**	N/A**
10.	Galvanizing Crew Leader (1100)	10.5	2	blueprints*
11.	Galvan. Acid Reclam Operator B (1100)	10.5	2	blueprints*
12.	Galvan. Acid Reclam Operator A (1100)	10.5	2	blueprints, percentages*
13.	Galv. Bridge Crane Operator (1100)	10.5	2	blueprints*
14.	Retread Machine Operator B (1170)	10.5	2	blueprints, percentages*
15.	Retread Machine Operator A (1170)	N/A**	N/A**	N/A**
16.	Small Diameter Mill Operator (2141)	9.5	2	blueprints*
17.	Forklift Operator (1020)	11.5	2	decimals, fractions, percentages, blueprints*
18.	Set-up Technician (1020)	11.5	2	blueprints*
19.	Small Diameter Mill Trainee B (2141)	9.5	2	blueprints*
20.	Cutoff Operator (2141)	5.0*	2	fractions, decimals, percentages, blueprints*
21.	Small Diameter Mill Trainee A (2141)	N/A**	N/A**	N/A**
22.	Small Diameter Mill Team Leader (2141)	9.5	2	blueprints*
23.	Small Diameter Mill Operator Asst. (2151)	9.5	2	blueprints
24.	Welder B (2151, 2062, 2063)	10.5	2	blueprints*
25.	Welder A (1020)	N/A**	N/A**	N/A**
26.	Slitter Machine Operator Leadman (2085)	10.3	2	blueprints*
27.	Slitter Machine Operator (2085)	10.3	2	blueprints*

28.	Slitter Machine Operator Trainee A (2085)	10.3	2	blueprints*
29.	Slitter Machine Operator Trainee B (2085)	10.3	2	blueprints*
30.	Big Wheel Operator (1050)	10.3	2	fractions, decimals, percentages, blueprints*
31.	Gearbox Machine Operator (1050)	10.9	2	decimals, fractions, percentages*
32.	Gearbox Machinist A (1050)	10.96	2	decimals, fractions, percentages*
33.	Gearbox Assembler A (1050)	10.96	2	decimals, fractions, percentages*
34.	Gearbox Assembler Trainee A (1050)	10.96	2	decimals, fractions, percentages*
35.	Gearbox Assembler B	10.9	2	decimals, fractions, percentages*
36.	Electrical Assembly Technician (1070)	10.3	2	decimals, percentages*
37.	Electrical Assembler A (1070)	10.7	2	decimals, percentages*
38.	Electrical Assembler B (1070)	10.3	2	decimals*
39.	Brake Press Operator (2151)	9.5	2	
40.	Brake Press Helper (2151)	9.5	2	
41.	Shear Operator (1010)	10.5	2	
42.	Brake Press Operator (1010)	10.5	2	
43.	CNC Angle Process Operator (1010)	10.5	2	
44.	CNC Brake Press Operator (1010)	10.5	2	
45.	Tapered Tube Former (2062)	10.5	2	percentages*
46.	Custom Fitter (2151)	10.3	2	
47.	Shipper A Outside (1212, 1213)	10.2	2	blueprints, fractions, decimals, percentages*
48.	Shipper B Outside (1212, 1213)	10.2	2	blueprints, fractions, decimals, percentages*
49.	Welder C (2061)	10.4	2	
50.	Maintainer B and C (2852, 2084)	9.5	2	

*Items marked are tasks which are not performed within the job and therefore the job standard is lower than the Valmont Minimum Standard.

** These items were not calculated, as no incumbents were in the job.

VALMONT MINIMUM BASIC SKILLS STANDARDS

READING LIST

- ASTM Standards (GE= 10.0)
- Company Memos/postings (benefit information, news releases, meeting notices, department request, etc.) (GE= 8.8)
- Company newsletter (GE=10.60)
- Employment Law Postings (GE= 9.0)
- Information related to Project Impact (GE= 9.3)
- Instructions about proper lifting (GE=4.77)
- Job Postings (GE= 3.4)
- Machine/Equipment Operating Instructions (GE= 5.9)
- Manufacturing Specification Standards Book (GE= 9.5)
- Material Safety Data Sheets (MSDS) (GE= 10.66)
- Product Warning Labels (GE= 10.0)
- Reject Tag Completion Instruction Poster (GE=7.3)
- Safety Brochure/gram (GE= 8.0)
- Safety Inspection Checklist(GE= 10.46)
- Safety Meeting Minutes (GE=8.52)
- Task Analysis Worksheets (GE= 5.6)
- Safety Mission Statement (GE= 8.3)

OVERALL G.E. 8.24

WRITING LIST

- Accident Reports (sentences/paragraph)
- E-Mail Messages (sentences/paragraph)
- Hazard Reports (sentences/paragraph)
- Incident Reports (sentences/paragraph)
- Move Tags (words, phrases)
- Notes to Other Shifts (sentences/paragraphs)
- Project IMPACT related writing (sentences/paragraphs)
- Reject Tags (phrases,sentences)
- Shipping Instructions (words, phrases)
- Task Analysis Worksheets (words, phrases)

None of the items on this list exceed writing at paragraph level as a means of conveying information (expository prose). This includes the ability to punctuate properly, write compound and complex sentences, and use adverbs and adjectives. GED level 2.

MATH LIST

- Add whole numbers, fractions, and decimals.
- Subtract whole numbers, fractions, and decimals.
- Multiply whole numbers and decimals.
- Divide whole numbers and decimals.
- Measure in whole numbers, fractions, and decimals (English system).
- Round off decimals.
- Calculate percentages.
- Read bar, circle and line graphs.
- Use four function and memory calculator.
- Read and derive measurements from blueprints.

Math is not based on a grade level although these activities would fall between the 6th and 8th grade range.

Attachment

D

TRAINING DATA

Valmont 2000

TRAINING DATA

TOTAL NUMBER OF EMPLOYEES TABE TESTED:

448 (includes terminations and management staff)

NUMBER OF EMPLOYEES TABE TESTED BY DIVISION:

268 Irrigation

180 ICPD

448 Total

UNDUPLICATED NUMBER OF EMPLOYEES REQUIRING CLASSES BY DIVISION:

225 Irrigation

162 ICPD

387 TOTAL

PERCENTAGE OF EMPLOYEES TAKING TABE REQUIRING CLASSES

TOTAL: 86.4%

84% Irrigation
90% ICPD

***NUMBER OF EMPLOYEES REQUIRING READING**

TOTAL	87
IRRIGATION	54
ICPD	33

***NUMBER OF EMPLOYEES REQUIRING WRITING**

TOTAL	345
IRRIGATION	206
ICPD	139

***NUMBER OF EMPLOYEES REQUIRING MATH**

TOTAL	240
IRRIGATION	143
ICPD	97

*Please note one employee may be enrolled in 1, 2, or 3 classes.

NUMBER OF EMPLOYEES COMPLETING READING THROUGH SESSION 5

ICPD	33
IRRIGATION	54

NUMBER OF EMPLOYEES COMPLETING WRITING THROUGH SESSION 5

ICPD	139
IRRIGATION	206

NUMBER OF EMPLOYEES COMPLETING MATH THROUGH SESSION 5

ICPD	107
IRRIGATION	143

DUPLICATE ENROLLMENT OF EMPLOYEES BY SESSION

SESSION 1

	IRRIGATION		ICPD	TOTAL	
READING	12		12	24	
WRITING	26		11	37	MATH
19	3	22			
TOTAL	57		26	83	

SESSION 2

	IRRIGATION		ICPD	TOTAL	
READING	18		9	27	
WRITING	40		34	74	MATH
11	11	22			
TOTAL	69		54	123	

SESSION 3

	IRRIGATION		ICPD	TOTAL	
READING	0		0	0	
WRITING	2		22	22	MATH
0	22	22			
TOTAL	2		44	46	

SESSION 4

	IRRIGATION		ICPD	TOTAL	
READING	12		6	18	
WRITING	44		22	66	MATH
37	11	48			
TOTAL	93		39	132	

SESSION 5

	IRRIGATION		ICPD	TOTAL	
READING	12		6	18	
WRITING	94		59	153	MATH
76	60	136			
TOTAL	182		125	307	

Attachment

E

Valmont Minimum
Basic Skills Standards

Date: October 22, 1993

Procedure: The information contained this report was acquired through (a) informal interviews, (b) job site visits, and (c) written responses to an inventory of reading and writing items and math competencies.

After having conducted several job site visits and informal interviews, as part of the production worker job analysis process, an inventory was prepared. The inventory included a list of items that are commonly read or written and a list of common math competencies. The inventory was then presented to members of the Valmont 2000 Task Force who in turn asked production managers and supervisors to review the inventory. Based upon their reviews, the inventory was reduced to its present size. Grade equivalency and general Education Development levels were determined by the Valmont 2000 Job Analyst and the Full Time Instructor.

Valmont 2000 Task Force: (a) Whit Bonifant, (b) Steve Narans, (c) Denny Thome, (d) Margaret Durr, Ph.D., (e) Vanessa Brown, (f) Kirby Sullivan.

Job Analyst: Vernon A. Peterson, Ph.D.

Instructor: Ken M. Jones, Ed.D.

Respondents: (a) Denny Thome, (b) Kirby Sullivan, (c) Vanessa Brown, (d) Russ Reeser, (e) Clark Robeson, (f) Fred Lapcheska, (g) Rod Morgan, (h) Ron Pearson, (i) Steve Schleicher, (j) Don Fritz, (k) Jon Meyer.

Reading

Readability Calculations: Readability was calculated on the RIGHTWRITER which uses the Flesh-Kincaid formula to calculate the Readability Index. This formula is the United States Government Department of Defense Standard. The Readability Index is based on the average sentence length and the average number of syllables per word.

Grade Equivalency: Grade equivalency represents the typical performance of students in a specified grade when tested in a given month of a school year. The numeral to the left of the decimal point indicates the school grade; the numeral to the right of the decimal point indicates the school month. A grade equivalency of 10.3, represents the typical performance of 10th grade students in November.

Recommendations: Based on the reading samples provided the recommended reading level competency is 8.2. Based on Dictionary of Occupational titles Scale of General Education Development (GED), production workers must perform at GED level 3.

Reading Samples	**G.E.**
ASTM Standards	10.0
Company Memos/postings (benefit information, news releases, meeting notices, department requests, etc.)	8.8
Company newsletter	10.60
Employment Law Postings	9.0
Information related to Project Impact	9.3
Instructions about proper lifting	4.77
Job Postings	3.4
Machine/Equipment Operating Instructions	5.9
Manufacturing Specifications Standards Book	9.5
*Materials Safety Data Sheets (MSDS)	10.66
Reject Tag Completion Instruction Poster	7.3
Safety Brochure/Gram	8.0
Safety Inspection Checklist	10.46
Safety Meeting Minutes	8.52
Task Analysis Worksheets	5.6
Safety Mission Statement	8.3

Writing

Writing Calculations: Writing levels were based on analysis of the writing samples provided. Special attention was given to the way in which words were used (e.g., in phrases, sentences, or paragraphs) and the purpose of the writing (e.g., expository prose).

Recommendations: The writing samples provided suggest that the level of writing required is minimal. A review of the writing samples review that most of the writing was expository prose -- discourse designed to convey information. The extent of writing did not exceed the paragraph level. Based on the Dictionary of Occupational titles' scale of General Education Development (GED), production workers must perform at GED level 2. This includes the ability to punctuate properly, write compound and complex sentences, and use adverbs and adjectives.

Writing Sample

Accident Reports (sentences/paragraph)
E-Mail Messages (sentences/paragraph)
Hazard Reports (sentences/paragraph)
Incident Reports (sentences/paragraph)
Move Tags (words, phrases)
Notes to Other Shifts (sentences/paragraphs)
Project IMPACT related writing (sentences/paragraphs)
Reject Tags (phrases,sentences)
Shipping Instructions (words, phrases)
Task Analysis Worksheets (words, phrases)

Mathematics

Math Calculations: Math competencies were drawn from a population of math competencies developed by Metropolitan Community College. These were derived from categories on the TABE and verified by a math expert from MCC.

Recommendation: Mathematics is not based on a grade level. However, the math competencies are typically addressed within the 6th to 8th grade. Based on the Dictionary of Occupational Titles' scale of General Education Development (GED), production workers must perform at GED level 2.

Math Sample

Add whole numbers, fractions, and decimals.
Subtract whole numbers, fractions, and decimals.
Multiply whole numbers and decimals.
Divide whole numbers and decimals.
Measure in whole numbers, fractions, and decimals (English system).
Round off decimals.
Calculate percentages.
Read bar, circle and line graphs.
Use four function and memory calculator.
Read and derive measurements from blueprints.

Date: Classes Started

Date Classes End:

Instructors Name:

Classes Location:	Valmont 2000 Classroom Bldg. 519
Telephone:	359-3157

READING IN THE WORKPLACE

WELCOME TO VALMONT 2000

A educational partnership between Metropolitan Community College and Valmont Industries, Inc.

Course Description:

This course is designed to prepare you to deal more effectively with on-the-job reading requirements using a problem-solving strategy. General topics of study include reading memos, forms, charts, graphs, tables, and reference materials, using selected vocabulary and comprehension skills.

Course Objectives:

Upon completion of Reading in the Workplace, the student will be able to demonstrate competency in reading a variety of materials, using the following skills:

1. Problem-solving
2. SQ3R (A study-reading technique)
3. Finding information
4. Following directions
5. Verifying information
6. Drawing conclusions
7. Identifying main ideas
8. Building vocabulary
    a. Work-specific words
    b. Words often confused
    c. Context clues
    d. Word parts

Methods of Instruction:

Instructor: Class lectures and demonstration will be used to explain reading concepts. Audio visual material and the interactive video system will supplement class activities.

Methods of Learning:

Student: Students will be expected to participate in all lectures, demonstrations, and assignments and are responsible for all assignments and materials covered in class. Attendance is mandatory.

Required Materials:

All learning materials and supplies will be furnished.

Evaluation:

1. Criteria for achieving mastery on all units and tests is 80%.
2. All students will evaluate the instructor and the course.

READING SYLLABUS ASSIGNMENTS

Week 1

Day 1
Introduction
Registration Form
Communication Survey
Icebreaker
Pre-Assessment

Day 2
Explain Pre-Assessment Results
Intro to text
Dictionary Handout (2 pages)
Dictionary Worksheet
Previewing Activity

Week 2

Day 1
Previewing Review Activity (optional)
Text (p. XII) Problem Solving Strategies
Problem Solving Activity
Text (pp. 3, 11, 89, 96, 263, 271) Memos
SQ3R Activity

Day 2
Memo Review
Mogen Bay Memo (overhead)
Mogens Bay article and work problems
Main Idea Guide (pp. 43-44) Topics
Vocabulary Guide (pp. 1-2) Context
Comprehension Passage Drills1-2

Week 3

Day 1
E-Mail Training (Make appointment with Pat Fiedler by Week #1)

Day 2
E-Mail review Work Problem
(may also be done Week 4- Day 1)
Main Idea Guide (pp. 45-48)
Comprehension Passage Drills 3-4
Vocabulary Guide Roots (pp. 3-6)
Memo Review - Spill Response (optional)

Week 4

Day 1
Text (pp. 29, 115) Forms
W4 Form Work Problem
Main Idea Practice (pp. 2-5)
Vocabulary Guide (pp. 7-10) Prefixes
Spill Response Forms - Work Problems

	Day 2	Text (pp. 206 - 207, 284 - 285) Forms (overhead) Main Idea Practice (pp. 6-10) Review and Midterm
Week 5		
	Day 1	Form Review - Safety Inspection Checklist Work Problems Topics, Main Idea Review - Work Problems Text (pp. 41-43, 50-51, 53) Charts and Tables Following Directions Guide
	Day 2	Text (pp. 129, 135-136) Charts and Tables Charts, Graphs, Tables Guide EPIC System Work Problems Comprehension Passage Drills 5 -6 Vocabulary Guide (pp. 11-13) Suffixes and Word Part Exercises
Week 6		
	Day 1	Text (pp. 219, 225, 310, 313) Charts and Tables Valmont Productivity Chart Activity Locating Details Guide Comprehension Passage Drills 7-8
	Day 2	Vocabulary Guide (p. 14) Dictionary Impact Booklet Work Problems Lockout/Tagout Work Problems Individualized Review (Optional)
Week 7		
	Day 1	Comprehension Passage Drills 9-10 Vocabulary Guide (pp. 15-16) Connotations, Thesaurus Drawing Conclusions Guide
	Day 2	Vocabulary Guide (pp. 17-18) Synonyms, Antonyms Critical Reading Guide Annual Evaluation Work Problems Review (use corrected Pre-Assessments)
Week 8		
	Day 1	Course Evaluation Communication Survey (post) Multipurpose Survey (yellow) Post-Assessment
	Day 2	TABE

Date: Classes Started

Date Classes End:

Instructors Name:

Classes Location:

Telephone:

WRITING IN THE WORKPLACE

WELCOME TO VALMONT 2000

A partnership between Metropolitan Community College and Valmont Industries, Inc.

Methods of Instruction:

Instructor: Class lectures and demonstration will be used to explain writing concepts. Audio visual material will supplement class activities.

Methods of Learning:

Student - Students will be expected to participate in all lectures, demonstrations, and assignments. Homework is optional. All students are totally and completely responsible for all assignments and materials covered in class.

Required Materials:

1. Learning Guides
2. Supplies will be furnished.

Evaluation:

1. Criteria for achieving mastery on all units and tests is 80%.
2. All students will evaluate the instructor.

Attendance is Mandatory.

Course Description:

This course enables students, using a problem solving strategy, to write clear and appropriate work-related messages and provide a good foundation for writing other business documents, proposals and correspondence.

Prerequisites:

None.

Course Objectives:

Upon completion of Writing in the Workplace, the student will be able to:

1. Use a problem-solving strategy to improve his/her writing.
2. Correctly use basic language and proof reading skills in their writing.
3. Record written information accurately and completely on Valmont developed forms.
4. Pass on written information accurately and completely to co-workers, supervisors, and others.
5. Request information and services from co-workers, supervisors, and others.
6. Respond to questions and requests through clear written communication.
7. Use the Interactive Video System to practice basic language skills.
8. Use the Completing Forms Strategy to complete all types of forms.
9. Apply basic E-mail techniques.

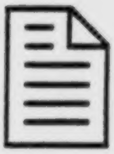
Suggested Course Outline: Writing

Week #1 Day 1	Introduction, Registration forms, Pre-Communication Survey, Informal Proofreading Assessment I Ice Breaker
Day 2	Review Pre-Assessment Results, Essay Assessment Pre-test
Week #2 Day 1	Explain Proofreading guide/worksheets Intro. to Text v-xiv Understanding Sentence Structure Learning Guide
Day 2	Review Complete Sentences Learning Guide Subject/Verb Agreement Learning Guide
Week #3 Day 1	Subject/Verb Agreement (continued) Pronouns Learning Guide
Day 2	Joining Words Learning Guide Writing Informal Messages Learning Guide Text Lesson 6 Skills Practice pg. 89-92 and pg. 165 - 167
Week #4 Day 1	Homonyms Learning Guide Text pg. 47-49, 63-65, and 272 - 273
Day 2	Learning Guide Completion or E-Mail Training

Week #5 Day 1	E-Mail Training or Learning Guide Completion
Day 2	Review and Midterm
Week #6 Day 1	Paragraph Development Learning Guide Impact Form
Day 2	Apostrophes Learning Guide Valmont forms
Week #7 Day 1	Commas Learning Guide Text pg 182, and pg 197-198, pg 213-217 Formal Letters pg. 213-217
Day 2	Essay Post Assessment Capitalization Learning Guide
Week #8 Day 1	Proofreading Assessment II Communication Survey MCC Student Evaluation of Instructor Yellow Multipurpose Survey
Day 2	Review Proofreading Assessment II results TABE Test

Appropriate timeline for completion depends on individual needs and performance.

Text - Writing for Workplace Success



Proofreading Guide

for Valmont Industries, Inc.

(name)

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Common Sentence Errors:

Spelling

Correct spelling is essential to effective communication. A misspelled word can distract the reader, cause misunderstandings and send a negative message about the writer and Valmont Industries, Inc. Because no spelling guidelines are foolproof, only one thing can improve your spelling: use of a dictionary.

Subject-verb agreement

Use a singular verb with a singular subject and a plural verb with a plural subject.

> The four workers have a photocopy of their notes.
> Ms. Downs was late for her appointment.

Note: In the first sentence, the plural subject (workers) takes a plural verb (have). In the second sentence, the singular subject (Ms. Downs) takes a singular verb (was).

This is the general rule; variations are discussed below.

Company Names

Most of the time, company names are singular.

> C & S Sales is listed in the directory.

There/Here

In sentences that begin with a there or a here, the true subject follows the verb.

> There is no reason for his behavior.
> Here are the reports you requested.

Intervening Words

Disregard any words that come between the subject and verb when creating agreement.

> One of them prefers to be transferred.
> The basis for many of the problems is the way we look at them.

Fragments

A fragment is a group of words that looks like a sentence, with a capital letter at the beginning and a period at the end, but that lacks an essential sentence element-either a subject or a verb. Some fragments are acceptable for emphasis:

> You would think that after 50 hours at a terminal, you would have a working program. *Wrong again.*

Most of the time fragments are errors that mislead the reader and indicate a careless author. Avoid them in formal writing.

> Error: The reason being that industrial growth did not outpace the inflation rate.
>
> One possible correction: The reason is that industrial growth did not outpace the inflation rate.

Run-together Sentences

Run-together sentences occur when two sentences are joined with no punctuation between them or with only a comma connecting them.

> It rained every day we never left the hotel.
> It rained every day, we never left the hotel

Run-together sentences, like these, are often confusing for the reader, who normally does not expect to see sentences joined this way and must stop and sort out what is being said.

❖ Ways of Correcting Run-together Sentences ❖

(See page 7 which explains punctuation of joining words.)

- *Use a coordinating conjunction.* One way of showing the relationship between sentences is by joining them with a coordinating conjunction.

  > I would like to buy a car, *but* I can't afford one.

- *Use a subordinator.* You can use a subordinator at the beginning of a sentence or in between two sentences.

  > *Although* I would like to buy a car, I can't afford one.
  > I would like to buy a car *although* I can't afford one.

- *Use a transition word.* Remember that these do not really join sentences together, so if you use a transition word or phrase, you will need a semi-colon or period.

  > I thought the computer would cost 1,200; however, I was incorrect.
  > I thought the computer would cost 1,200. However, I was incorrect.

- *Use a semi-colon.* As has been shown above, a comma is not sufficient to join two sentences, but a semi-colon *is* enough. In fact, one way of looking at a semi-colon is to think of it as a heavy-duty comma, strong enough to join two sentences.

> It was sundown; my long, exhausting day was finally over.

Homonyms

Homonyms are words that sound alike but do not mean the same thing and are, therefore, not spelled alike. The "soundalikes" are not interchangeable. If you use the wrong form in a sentence, you will confuse or mislead your reader.

Affect/Effect

Affect is most frequently used as a verb meaning to influence:

> The inflation rate *affects* unemployment.

Effect is most frequently used as a noun meaning a result or a consequence:

> The *effect* of spiraling inflation was an increase in unemployment.

Its/It's

Its shows possession:

> This accounting system has outlived *its* usefulness.

It's is a contraction of it is or it has:

> *It's* clear that his accounting system is not working.

Personnel/Personal

Personnel are the persons working for a given organization:

> He deals effectively with *personnel* issues [those regarding employees].

Personal means private:

> Her *personal* life [her private life] is a mess.

Than/Then

Than is used for a comparison:

The new computer is more powerful than the new one.

Then is used to show condition or time relationships:

If you enjoy your work, *then* you won't dread getting up in the morning.

Their/There/They're

Their shows possession:

Their company is doing quite well.

There indicates direction or is a way of introducing a thought:

There are three kinds of delivery systems.

They're is a contraction of *they are*:

They're more trouble than *they're* worth.

Two/To/Too

Two indicates the number 2:

Two years from now I want to be working somewhere else.

To shows location or is part of a verb:

I need *to* go *to* the store after work.

Too means *very* or *also*:

I am *too* sick to eat.

Your/You're

Your indicates possession:

Your writing can improve with practice.

You're is a contraction of *you are*:

You're reading this sentence.

Punctuation

Apostrophes

Apostrophes Indicating Possession: At the end of a singular word, or of a plural word that does not end in *s*, add an apostrophe plus *s* to indicate possession.

The people's candidate won.
The chainsaw was Bill's.
The men's locker room burned.
The car's paint was ruined.

Apostrophes Indicating a Contraction: An apostrophe shows that you have omitted one or more letters when you have combined two words together.

I am	I'm
He is	He's
You are	You're
Is not	Isn't
Do not	Don't

Capitalization

Capitalize the following:

titles of people	Safety Systems Supervisor
books	*Moby Dick*
languages	English, Spanish
days of the week	Monday
the months	April
holidays	Christmas
names of organizations or groups	Valmont Industries, Inc.

Commas

Commas Separate Items (Words, Phrases, or Sentences) in a Series. Use a comma to separate items in a series.

Sam, Joe, and Marsha will be joining the Valmont 2000 project.
The office was yellow, orange, and red.
The new employees complained that the hours were too long, the pay was too low, and that the work was too boring.

Commas Set Off Introductory Phrases. Phrases that begin a sentence can be set off with a comma.

Moving quickly, Valmont won the multi-million dollar project.
In other words, you're fired.
In fact, the finished work was superb.
Mary, you've done a great job.

Commas Set Off Parenthetical Elements. Items that interrupt the flow of the sentence are called parenthetical and are enclosed by commas.

The deluxe model, of course, is more expensive.
Your report, by the way, was impeccable.
Martha Jark, our new president, is overhauling personnel policies.
Our warranty, however, does not cover damage caused during delivery.

Commas Set Off Quoted Material. Quoted items included within a sentence are often set off by commas.

The customer said, "I'll take it," as soon as he laid eyes on our new product.

Commas Are Used In Other Common Practices.

Commas are used to set off the day of the month from the year in a date.

July 27, 1993

Commas are used to set off the date in a sentence.

December 15, 1999, is my date of retirement.

Commas are also used to set off the street, city, and state in an address.

The bill was sent to Carl Jett, 184 Sea Street, Albany, New York 01642.

No commas are used when the address is divided into different lines, except the one between the city and state.

Carl Jett
184 Sea Street
Albany, New York 01642

Joining Words

Coordinating Conjunctions

- For
- And
- Nor
- But
- Or
- Yet
- So

(Remember the word, FANBOYS.)

Subordinators

- although
- though
- even though
- whereas
- while
- because
- since
- as
- if
- unless
- after
- before
- until
- when
- as soon as

Transition Words

- however
- therefore
- thus
- moreover
- then
- also
- nonetheless
- nevertheless
- for example
- on the other hand
- consequently
- otherwise
- in addition

) S, cc S. or S. Cc S.

2.) sub S, S. and S sub S.

3.) S; tw, S. or S. Tw, S.

[S=sentence]

1.) Coordinating conjunctions may join independent sentences. When they do, put a comma in front of the coordinating conjunction. Coordinating conjunctions may also introduce sentences.

> Cindy likes writing memos, but John prefers talking on the telephone.
>
> Cindy likes writing memos. But John prefers talking on the telephone

2.) Subordinators can join two sentences. When the subordinator is at the beginning, put the comma after the first "sentence." When the subordinator is in the middle, a comma is not needed.

> While Cindy likes getting to work at 7:30, John prefers arriving at 8:00.
>
> John prefers arriving at 8:00 while Cindy likes getting to work at 7:30.

3.) Transition words don't actually join sentences and may be placed within or at the end of a sentence instead of at the beginning of it.

> Cindy likes jogging Saturday afternoons; however, John usually takes a nap.
>
> Cindy likes jogging Saturday afternoons. However, John usually takes a nap.

Date: Classes Started

Date Classes End:

Instructors Name:

Classes Location: Valmont 2000
Classroom
Bldg. 519

Telephone: 359-3157

MATH IN THE WORKPLACE

VALMONT®
2000

WELCOME TO VALMONT 2000

A educational partnership between Metropolitan Community College and Valmont Industries, Inc.

COURSE DESCRIPTION:

This course is designed to prepare you to deal more effectively with math requirements on the job. General topics of study include: adding, subtracting, multiplying, and dividing whole numbers, decimals, and fractions, finding amounts, expressing relationships, verifying numbers, and analyzing and interpreting information.

COURSE OBJECTIVES:

Upon completion of Math in the Workplace, the student will be able to:

1. Solve work-related with problems using problem-solving strategies.
2. Practice basic math skills using the Epic System and introducing the Interactive Video program.
3. Solve basic math problems.
4. Solve work-related problems expressing relationships (fractions, ratios, percents, measurements).
5. Verify numerical information presented on graphs and tables.
6. Analyze and interpret numerical information.

Methods of Instruction:

Instructor: Class lectures and demonstration will be used to explain reading concepts. Audio visual material in the interactive video system will supplement class activities.

Methods of Learning:

Student: Students will be expected to participate in all lectures, demonstrations, and assignments, and are responsible for all assignments and materials covered in class. Attendance is mandatory.

Required Materials:

All learning materials and supplies will be furnished.

Evaluation:

1. Criteria for achieving mastery on all units and tests is 80%.
2. All students will evaluate the instructor and the course.

COURSE OUTLINE

WEEK 1:

DAY 1: Introduction/Registration Form/
Communication Survey

DAY 2: Pre-Assessment
Determination of Individual Needs
Introduction to Text

WEEK 2:

DAY 1: Explain Pre-Assessment Results
Multiply/Divide Whole Numbers
Work Problems/Work Keys

DAY 2: Addition and Subtraction of Decimals
Workplace Problems/Work Keys

WEEK 3:

DAY 1: Multiplication, Division of Decimals
Workplace Problems/Work Keys

DAY 2: Review and Unit Test

WEEK 4:

DAY 1: Check Test Results
Introduction of Fractions (Addition/Subtraction)
Workplace Problems/Work Keys

DAY 2: Fraction - Multiplication and Division
Workplace Problems/Work Keys

MATH SYLLABUS (cont.)

WEEK 5:

DAY 1: Relationships: Fractions, Decimals, Percents
Workplace Problems/Work Keys

DAY 2: Relationships: Ratios/Proportions
Workplace Problems/Work Keys

WEEK 6:

DAY 1: Review/Unit Test 2

DAY 2: Check Test Results/graphs
Workplace Problems/Work Keys

WEEK 7:

DAY 1: Averages/Measurement
Workplace Problems/Work Keys

DAY 2: Geometry/Review for Final
Workplace Problems/Work Keys

WEEK 8:

DAY 1: Post Assessment/Surveys/Forms

DAY 2: TABE

NAME: ____________________
LEARNING GUIDE AVG: _____

MULTIPLICATION & DIVISION OF WHOLE NUMBERS

LESSONS INCLUDED:

1. Multiplication of whole numbers.
2. Division of whole numbers.
3. Work Place Problems.

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MATH FOR WORKPLACE SUCCESS

Exercise I
Set up these problems. Use addition, subtraction, multiplication, or division. Do NOT solve.

Example: Given 100 rolls of tape with 4 rolls in a package, how many packages are there?

100 ÷ 4

1. Given 144 pencils with 12 pencils in a box, how many boxes are there?

2. Given 30 boxes of paper clips with 100 in a box, how many paper clips are there?

3. A store had 120 calendars; 60 were sold. How many were left?

4. Given 30 red pens and 40 blue pens, what is the total number of pens?

5. The supply shelf has 25 reams of white paper and 5 reams of yellow paper. How much more white paper is there than yellow paper?

6. A store served 100 customers a day for 5 days. How many customers were served in all?

7. Twenty boxes were used to pack 200 computer books. How many books were packed in each box?

8. Seventy calculators were packed. Five were put into each carton. How many cartons were used?

Exercise 2 (show remainders)

1. $2\overline{)117}$ $5\overline{)127}$ $6\overline{)189}$

$8\overline{)194}$ $10\overline{)223}$

2. $11\overline{)312}$ $12\overline{)253}$ $13\overline{)300}$

$14\overline{)356}$ $15\overline{)698}$

Exercise 3 (show remainders if needed)

Divide

1. $12\overline{)2772}$ $13\overline{)1768}$ $14\overline{)2156}$

$15\overline{)2745}$

2. $16\overline{)448}$ $6\overline{)1949}$ $5\overline{)1337}$

$10\overline{)8423}$

3. $9\overline{)920}$ $4\overline{)4276}$

Exercise 4

1. 240 divided by 12

2. 1089 ÷ 33 =

3. 81,640 ÷ 65 =

4. 2090 divided by 22

5. 8585 ÷ 5 =

6. 11,088 divided by 112 =

7. 25,410 ÷ 66 =

Exercise 5

Calculator to be used

$187\overline{)100,232}$ $583\overline{)413,347}$ $406\overline{)371,490}$

$820\overline{)538,740}$ $323\overline{)272,289}$ $637\overline{)555,464}$

$251\overline{)176,955}$ $738\overline{)477,486}$ $446\overline{)383,560}$

$509\overline{)309,981}$ $923\overline{)800,241}$ $692\overline{)642,176}$

$811\overline{)702,326}$ $372\overline{)203,112}$ $458\overline{)415,864}$

$540\overline{)756,000}$

Exercise 6

Divide.

1. If a truck can transport 15 t-poles, how many trucks are needed to transport 770 t-poles?

2. There are 16 ounces in one pound. How many pounds are there in 846 ounces?

3. Phil packs irrigation hardware into boxes. Each box holds 48 pieces. how many boxes can Phil fill with 11,276 pieces of hardware?

4. The Valmont jet travels an average speed of 415 miles per hour. How many hours will it take "The Valcon" to travel 2905 miles?

5. Valmont staff decided to update their break rooms. They bought $250 worth of paint, $30,0000 worth of vending machines, $9615 worth of furniture. There are 85 staff that contributed to this cause. What was the average amount each staff member gave if the costs were split equality?

6. Dezi and Lucy, both employees from Valmont, bring home a combined salary of $46,000. From that amount 12,400 must be taken out for tasks. How much do Dezi and Lucy bring home monthly after taxes?

Exercise 1

Multiply

1.	$\begin{array}{r} 20 \\ \underline{\times 12} \end{array}$	$\begin{array}{r} 30 \\ \underline{\times 14} \end{array}$	$\begin{array}{r} 50 \\ \underline{\times 23} \end{array}$	$\begin{array}{r} 60 \\ \underline{\times 35} \end{array}$
2.	$\begin{array}{r} 709 \\ \underline{\times 12} \end{array}$	$\begin{array}{r} 70 \\ \underline{\times 26} \end{array}$	$\begin{array}{r} 407 \\ \underline{\times 35} \end{array}$	$\begin{array}{r} 502 \\ \underline{\times 44} \end{array}$

Exercise 2

Multiply

1.	$\begin{array}{r} 1423 \\ \underline{\times\ 40} \end{array}$	$\begin{array}{r} 3425 \\ \underline{\times\ 25} \end{array}$	$\begin{array}{r} 2376 \\ \underline{\times\ 47} \end{array}$
2.	$\begin{array}{r} 1524 \\ \underline{\times 120} \end{array}$	$\begin{array}{r} 4536 \\ \underline{\times 460} \end{array}$	$\begin{array}{r} 4732 \\ \underline{\times 142} \end{array}$

Exercise 3

Multiply.

1. 25 times 12 =

2. 43 times 23 =

3. 242 times 10 =

4. 25 x 36 =

5. 45 x 128 =

6. 52 x 208 =

7. 46 x 309 =

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Exercise 4

Work Place Problems - Multiplication

Problem 1: Valmont's welding department supervisor states that one of its welders can weld 2 poles per hour. How many such poles can 27 welders weld if they work 45 hours each?

Problem 2: What is the total length of wire on 14 spools if each spool contains 150 ft.?

Problem 3: A welder needs 25 lengths of steel, each 9' (feet) long. What is the total length of steel he needs?

Problem 4: During a blizzard, Alfonzo, a Valmont driver, hauled pipe for a 5 hour trip. He drove for two hours at 19 miles per hour and three hours at 47 miles per hour. How far did Alfonzo drive?

Problem 5: There are nine buildings in the Valmont Executive Apartment Complex with each building having twelve floors. On every floor, there are six apartments. What is the total number of apartments in the complex?

NAME: ___________
LEARNING GUIDE AVG: _____

FRACTIONS

LESSONS INCLUDED:

1. Fraction conversion.
2. Addition of fractions.
3. Subtraction of fractions.
4. Multiplication of fractions.
5. Division of fractions.
6. Work place problems.

What Are Fractions?

A fraction is a part of something. A penny is a fraction of a dollar. It is one of the 100 equal parts of a dollar or $\frac{1}{100}$ (one hundred*th*) of a dollar. An inch is a fraction of a foot. It is one of the 12 equal parts of a foot or $\frac{1}{12}$ (one twelf*th*) of a foot. 5 days are a fraction of a week. They are 5 of the 7 equal parts of a week or $\frac{5}{7}$ (five seven*ths*) of a week.

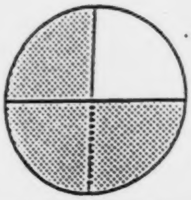
The two numbers in a fraction are called the

$$\frac{\text{numerator}}{\text{denominator}}$$

—which tells how many parts you have

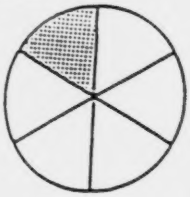
—which tells how many parts in the whole

EXAMPLE: The fraction $\frac{3}{4}$ tells you what part of the figure at the right is shaded. 3 parts are shaded. The whole figure is divided into 4 equal parts.

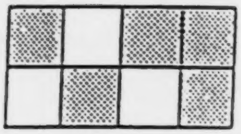


Write fractions that represent the part of each figure that is shaded.

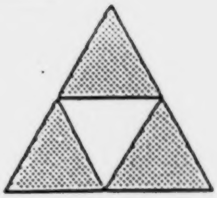
1. ____



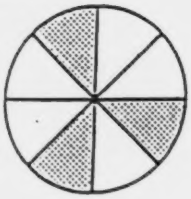
2. ____



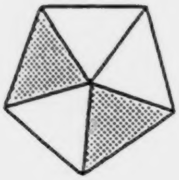
3. ____



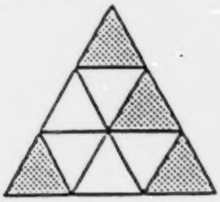
4. ____



5. ____



6. ____



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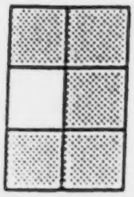

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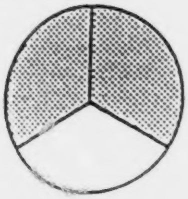

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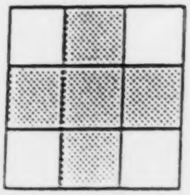


Fraction Families: Equivalient fractions obtained by multiplying numerator and denominator by:

$\frac{1}{2}$	$\frac{2}{4}$	$\frac{3}{6}$	$\frac{4}{8}$	$\frac{5}{10}$	$\frac{6}{12}$	$\frac{7}{14}$	$\frac{8}{16}$	$\frac{9}{18}$	$\frac{10}{20}$
$\frac{1}{3}$	$\frac{2}{6}$	$\frac{3}{9}$	$\frac{4}{12}$	$\frac{5}{15}$	$\frac{6}{18}$	$\frac{7}{21}$	$\frac{8}{24}$	$\frac{9}{27}$	$\frac{10}{30}$
$\frac{1}{4}$	$\frac{2}{8}$	$\frac{3}{12}$	$\frac{4}{16}$	$\frac{5}{20}$	$\frac{6}{24}$	$\frac{7}{28}$	$\frac{8}{32}$	$\frac{9}{36}$	$\frac{10}{40}$
$\frac{1}{5}$	$\frac{2}{10}$	$\frac{3}{15}$	$\frac{4}{20}$	$\frac{5}{25}$	$\frac{6}{30}$	$\frac{7}{35}$	$\frac{8}{40}$	$\frac{9}{45}$	$\frac{10}{50}$
$\frac{1}{6}$	$\frac{2}{12}$	$\frac{3}{18}$	$\frac{4}{24}$	$\frac{5}{30}$	$\frac{6}{36}$	$\frac{7}{42}$	$\frac{8}{48}$	$\frac{9}{54}$	$\frac{10}{60}$
$\frac{1}{7}$	$\frac{2}{14}$	$\frac{3}{21}$	$\frac{4}{28}$	$\frac{5}{35}$	$\frac{6}{42}$	$\frac{7}{49}$	$\frac{8}{54}$	$\frac{9}{63}$	$\frac{10}{70}$
$\frac{1}{8}$	$\frac{2}{16}$	$\frac{3}{24}$	$\frac{4}{32}$	$\frac{5}{40}$	$\frac{6}{48}$	$\frac{7}{56}$	$\frac{8}{64}$	$\frac{9}{72}$	$\frac{10}{80}$
$\frac{1}{9}$	$\frac{2}{18}$	$\frac{3}{27}$	$\frac{4}{36}$	$\frac{5}{45}$	$\frac{6}{54}$	$\frac{7}{63}$	$\frac{8}{72}$	$\frac{9}{81}$	$\frac{10}{90}$
$\frac{1}{10}$	$\frac{2}{20}$	$\frac{3}{30}$	$\frac{4}{40}$	$\frac{5}{50}$	$\frac{6}{60}$	$\frac{7}{70}$	$\frac{8}{80}$	$\frac{9}{90}$	$\frac{10}{100}$
$\frac{2}{3}$	$\frac{4}{6}$	$\frac{6}{9}$	$\frac{8}{12}$	$\frac{10}{15}$	$\frac{12}{18}$	$\frac{14}{21}$	$\frac{16}{24}$	$\frac{18}{27}$	$\frac{20}{30}$
$\frac{2}{5}$	$\frac{4}{10}$	$\frac{6}{15}$	$\frac{8}{20}$	$\frac{10}{25}$	$\frac{12}{30}$	$\frac{14}{35}$	$\frac{16}{40}$	$\frac{18}{45}$	$\frac{20}{50}$
$\frac{2}{7}$	$\frac{4}{14}$	$\frac{6}{21}$	$\frac{8}{28}$	$\frac{10}{35}$	$\frac{12}{42}$	$\frac{14}{49}$	$\frac{16}{56}$	$\frac{18}{63}$	$\frac{20}{70}$
$\frac{2}{9}$	$\frac{4}{18}$	$\frac{6}{27}$	$\frac{8}{36}$	$\frac{10}{45}$	$\frac{12}{54}$	$\frac{14}{63}$	$\frac{16}{72}$	$\frac{18}{81}$	$\frac{20}{90}$
$\frac{3}{4}$	$\frac{6}{8}$	$\frac{9}{12}$	$\frac{12}{16}$	$\frac{15}{20}$	$\frac{18}{24}$	$\frac{21}{28}$	$\frac{24}{32}$	$\frac{27}{36}$	$\frac{30}{40}$
$\frac{3}{5}$	$\frac{6}{10}$	$\frac{9}{15}$	$\frac{12}{20}$	$\frac{15}{25}$	$\frac{18}{30}$	$\frac{21}{35}$	$\frac{24}{40}$	$\frac{27}{45}$	$\frac{30}{50}$
$\frac{3}{7}$	$\frac{6}{14}$	$\frac{9}{21}$	$\frac{12}{28}$	$\frac{15}{35}$	$\frac{18}{42}$	$\frac{21}{49}$	$\frac{24}{56}$	$\frac{27}{63}$	$\frac{30}{70}$
$\frac{3}{8}$	$\frac{6}{16}$	$\frac{9}{24}$	$\frac{12}{32}$	$\frac{15}{40}$	$\frac{18}{42}$	$\frac{21}{56}$	$\frac{24}{64}$	$\frac{27}{72}$	$\frac{30}{80}$
$\frac{3}{10}$	$\frac{6}{20}$	$\frac{9}{30}$	$\frac{12}{40}$	$\frac{15}{50}$	$\frac{18}{60}$	$\frac{21}{70}$	$\frac{24}{80}$	$\frac{27}{90}$	$\frac{30}{100}$

Forms of Fractions

Proper fraction – The top number is *less than* the bottom number.

EXAMPLES: $\frac{1}{3}$ $\frac{3}{10}$ $\frac{7}{19}$

A proper fraction is less than all the parts the whole is divided into. The value of a proper fraction is *always less than one.*

Improper fraction – The top number is *equal to or larger than* the bottom number.

EXAMPLES: $\frac{3}{2}$ $\frac{9}{4}$ $\frac{8}{8}$

An improper fraction is all the parts that a whole is divided into such as $\frac{8}{8}$, or it is more than the total parts in the whole. The value of an improper fraction is either *equal to one or more than one.*

Mixed number – A whole number is written next to a proper fraction.

EXAMPLES: $1\frac{2}{5}$ $3\frac{1}{2}$ $10\frac{4}{7}$

Tell whether each of the following is a proper fraction (P), an improper fraction (I), or a mixed number (M).

1. $\frac{9}{6}$ ______ $\frac{6}{20}$ ______ $4\frac{1}{2}$ ______ $\frac{9}{9}$ ______

2. $\frac{14}{15}$ ______ $\frac{20}{19}$ ______ $\frac{18}{18}$ ______ $12\frac{1}{10}$ ______

3. $6\frac{3}{8}$ ______ $\frac{66}{100}$ ______ $\frac{2}{200}$ ______ $\frac{300}{3}$ ______

4. $\frac{65}{115}$ ______ $\frac{110}{75}$ ______ $3\frac{4}{5}$ ______ $\frac{7}{51}$ ______

Reducing Fractions

The coin we call a quarter stands for 25 pennies out of the total of 100 pennies in a dollar. You could call 25¢ $\frac{25}{100}$ of a dollar, or thinking of the 5 nickels in 25¢, $\frac{5}{20}$ of a dollar. The easiest way is to say that 25¢ is $\frac{1}{4}$ of a dollar. $\frac{1}{4}$ is the *reduced* form of $\frac{25}{100}$ and $\frac{5}{20}$. Reducing a fraction means writing it an easier way – with smaller numbers.

Study the following examples to see how fractions are reduced.

EXAMPLE 1. Reduce $\frac{15}{20}$

Step 1. Find a number that goes evenly into the top and bottom numbers of the fraction. 5 goes evenly into both 15 and 20.

$$\frac{15 \div 5}{20 \div 5} = \frac{3}{4}$$

Step 2. Check to see whether another number goes evenly into both the top and bottom numbers of the fraction. Since no other number goes evenly into both 3 and 4, the fraction is reduced as far as it will go.

EXAMPLE 2. Reduce $\frac{48}{64}$

Step 1. Find a number that goes evenly into the top and bottom numbers of the fraction. 8 goes evenly into both 48 and 64.

$$\frac{48 \div 8}{64 \div 8} = \frac{6}{8}$$

Step 2. Check to see whether another number goes evenly into both the top and bottom numbers of the fraction. 2 goes evenly into both 6 and 8.

$$\frac{6 \div 2}{8 \div 2} = \frac{3}{4}$$

Step 3. Check to see whether another number goes evenly into both the top and bottom numbers of the fraction. In this case, the fraction is reduced as far as it will go.

When you reduce a fraction, the value does not change. A reduced fraction is equal to the original fraction.

When you have reduced a fraction as much as possible, the fraction is then in **lowest terms**.

When both the top and bottom numbers end with 0's, cross out the 0's, a zero at the top for a zero at the bottom. Then check to see if you can continue to reduce.

EXAMPLE 3. Reduce $\frac{20}{30}$

Step 1. Cross out the 0's at the end of each number. $\frac{20}{30}$

Step 2. Check to see if you can continue to reduce. $\frac{2}{3}$

In this case, the fraction is reduced as far as it will go.

EXAMPLE 4. Reduce $\frac{40}{100}$

Step 1. Cross out one 0 at the end of each number. $\frac{40}{100}$

Be sure that you cross out only one zero in the bottom number since you crossed out only one zero in the top number.

Step 2. Check to see if you can continue to reduce. 2 goes evenly into both 4 and 10. $\frac{4 \div 2}{10 \div 2} = \frac{2}{5}$

Reduce each fraction to lowest terms.

1. $\frac{6}{12}$ ______ $\frac{6}{24}$ ______ $\frac{3}{9}$ ______ $\frac{9}{45}$ ______ $\frac{6}{48}$ ______

2. $\frac{35}{40}$ ______ $\frac{32}{36}$ ______ $\frac{16}{18}$ ______ $\frac{18}{21}$ ______ $\frac{14}{21}$ ______

3. $\frac{20}{50}$ ______ $\frac{20}{40}$ ______ $\frac{70}{200}$ ______ $\frac{90}{140}$ ______ $\frac{70}{160}$ ______

4. $\frac{22}{66}$ ______ $\frac{45}{60}$ ______ $\frac{14}{35}$ ______ $\frac{42}{56}$ ______ $\frac{48}{64}$ ______

5. $\frac{75}{80}$ ______ $\frac{220}{480}$ ______ $\frac{72}{90}$ ______ $\frac{26}{39}$ ______ $\frac{16}{30}$ ______

6. $\frac{50}{700}$ ______ $\frac{14}{42}$ ______ $\frac{8}{400}$ ______ $\frac{63}{81}$ ______ $\frac{35}{49}$ ______

Raising Fractions to Higher Terms

An important skill in addition and subtraction of fractions is raising a fraction to higher terms. This is the opposite of reducing a fraction to lowest terms.

EXAMPLE 1. Raise $\frac{2}{5}$ to 20ths.

Step 1. Divide the old bottom number into the new one. $\begin{array}{r} 4 \\ 5\overline{)\,20} \end{array}$

Step 2. Multiply the answer (4) by the old top number (2). $\frac{2 \times 4}{5 \times 4} = \frac{8}{20}$

Check. Reduce the new fraction to see if you get the original fraction. $\frac{8 \div 4}{20 \div 4} = \frac{2}{5}$

EXAMPLE 2. $\frac{4}{9} = \frac{?}{27}$

Step 1. Divide the old bottom number into the new one. $\begin{array}{r} 3 \\ 9\overline{)\,27} \end{array}$

Step 2. Multiply the answer (3) by the old top number (4). $\frac{4 \times 3}{9 \times 3} = \frac{12}{27}$

Check. Reduce the new fraction to see if you get the original fraction. $\frac{12 \div 3}{27 \div 3} = \frac{4}{9}$

Raise each fraction to higher terms by filling in the missing top number.

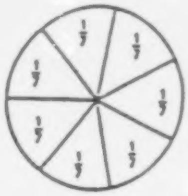
1. $\frac{4}{5} = \frac{\quad}{30}$ $\frac{9}{10} = \frac{\quad}{20}$ $\frac{1}{6} = \frac{\quad}{18}$ $\frac{5}{8} = \frac{\quad}{32}$

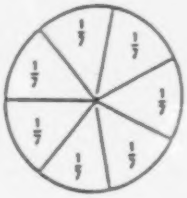
2. $\frac{4}{7} = \frac{\quad}{35}$ $\frac{1}{2} = \frac{\quad}{36}$ $\frac{2}{3} = \frac{\quad}{21}$ $\frac{9}{11} = \frac{\quad}{66}$

3. $\frac{5}{9} = \frac{\quad}{45}$ $\frac{3}{4} = \frac{\quad}{44}$ $\frac{7}{12} = \frac{\quad}{60}$ $\frac{1}{3} = \frac{\quad}{45}$

Changing Improper Fractions to Whole or Mixed Numbers

An improper fraction is a fraction with a top number that is as big or bigger than the bottom number. An improper fraction is equal to or larger than one whole.





Suppose a group of people order two pizzas each of which has been cut into seven equal parts (see the illustration at the right). Each slice is then $\frac{1}{7}$ of the whole pizza. If two people eat seven slices between them $\left(\text{or } \frac{7}{7}\right)$, they have eaten one whole pizza $\left(\frac{7}{7} = 1\right)$. If those two people had eaten eight slices between them $\left(\text{or } \frac{8}{7}\right)$, they would have eaten one whole pizza plus $\frac{1}{7}$ of another pizza $\left(\frac{8}{7} = 1\frac{1}{7}\right)$.

You can change any improper fraction, such as $\frac{8}{7}$, into a mixed number by dividing the bottom number into the top number and writing the remainder, if any, over the original bottom number.

EXAMPLE: Change $\frac{21}{9}$ to a mixed number.

Step 1. Divide the bottom into the top.

$$\begin{array}{r} 2 \\ 9\overline{)\,21} \\ \underline{18} \\ 3 \end{array}$$

Step 2. Write the remainder as a fraction over the original bottom number.

$$2\frac{3}{9}$$

Step 3. Reduce the remaining fraction.

$$\frac{3 \div 3}{9 \div 3} = \frac{1}{3}$$

The answer becomes $2\frac{1}{3}$.

Change each fraction to a whole or mixed number. Be sure to reduce any remaining fractions.

1. $\frac{14}{8} =$ $\qquad$ $\frac{33}{6} =$ $\qquad$ $\frac{14}{5} =$ $\qquad$ $\frac{30}{7} =$ $\qquad$ $\frac{12}{3} =$

2. $\frac{30}{9} =$ $\qquad$ $\frac{26}{8} =$ $\qquad$ $\frac{18}{6} =$ $\qquad$ $\frac{36}{10} =$ $\qquad$ $\frac{16}{8} =$

3. $\frac{13}{\ } =$ $\qquad$ $\frac{45}{\ } =$ $\qquad$ $\frac{45}{\ } =$ $\qquad$ $\frac{32}{\ } =$ $\qquad$ $\frac{42}{\ } =$

Changing Mixed Numbers to Improper Fractions

An important skill in multiplication and division of fractions is changing a mixed number, such as $2\frac{1}{4}$, to an improper fraction. One whole is equal to $\frac{4}{4}$, 2 is equal to $\frac{8}{4}$. Adding the extra $\frac{1}{4}$, we get $\frac{9}{4}$.

Study the following example to see how mixed numbers are changed to improper fractions.

EXAMPLE 1. Change $2\frac{1}{4}$ to an improper fraction.

Step 1. Multiply the bottom number by the whole number. $4 \times 2 = 8$

Step 2. Add the result to the top number. $8 + 1 = 9$

Step 3. Place the total over the bottom number. $\frac{9}{4}$

EXAMPLE 2. Change $5\frac{2}{3}$ to an improper fraction.

Step 1. $3 \times 5 = 15$

Step 2. $15 + 2 = 17$

Step 3. Place 17 over 3

Answer: $5\frac{2}{3} = \frac{17}{3}$

Change each mixed number to an improper fraction.

1. $6\frac{3}{4} =$ $1\frac{4}{7} =$ $4\frac{1}{3} =$ $6\frac{2}{7} =$ $3\frac{3}{5} =$

2. $9\frac{1}{2} =$ $4\frac{5}{8} =$ $2\frac{9}{10} =$ $6\frac{3}{4} =$ $3\frac{5}{9} =$

$11\frac{1}{3} =$ $11\frac{2}{5} =$ $9\frac{5}{12} =$ $6\frac{7}{8} =$ $13\frac{1}{4} =$

Adding Fractions with the Same Bottom Numbers

To add fractions with the same bottom numbers, add the top numbers, and put the total over the bottom number.

EXAMPLE: $\begin{array}{r} \frac{2}{7} \\ +\frac{3}{7} \\ \hline \frac{5}{7} \end{array}$

Step 1. Add the top numbers. 2 + 3 = 5.

Step 2. Place the total (5) over the bottom number: $\frac{5}{7}$

Add the following.

1. $\begin{array}{r} \frac{3}{9} \\ +\frac{3}{9} \\ \hline \end{array}$ $\quad$ $\begin{array}{r} \frac{3}{7} \\ +\frac{1}{7} \\ \hline \end{array}$ $\quad$ $\begin{array}{r} \frac{4}{8} \\ +\frac{5}{8} \\ \hline \end{array}$ $\quad$ $\begin{array}{r} \frac{5}{12} \\ +\frac{2}{12} \\ \hline \end{array}$ $\quad$ $\begin{array}{r} \frac{5}{13} \\ +\frac{6}{13} \\ \hline \end{array}$

2. $\begin{array}{r} \frac{3}{11} \\ \frac{4}{11} \\ +\frac{2}{11} \\ \hline \end{array}$ $\quad$ $\begin{array}{r} \frac{5}{9} \\ \frac{3}{9} \\ +\frac{1}{9} \\ \hline \end{array}$ $\quad$ $\begin{array}{r} \frac{2}{15} \\ \frac{7}{15} \\ +\frac{4}{15} \\ \hline \end{array}$ $\quad$ $\begin{array}{r} \frac{8}{17} \\ \frac{3}{17} \\ +\frac{5}{17} \\ \hline \end{array}$ $\quad$ $\begin{array}{r} \frac{2}{19} \\ \frac{9}{19} \\ +\frac{6}{19} \\ \hline \end{array}$

3. $\begin{array}{r} 4\frac{2}{5} \\ +3\frac{3}{5} \\ \hline \end{array}$ $\quad$ $\begin{array}{r} 6\frac{3}{10} \\ +8\frac{8}{10} \\ \hline \end{array}$ $\quad$ $\begin{array}{r} 5\frac{4}{11} \\ +4\frac{7}{11} \\ \hline \end{array}$ $\quad$ $\begin{array}{r} 8\frac{8}{13} \\ +6\frac{4}{13} \\ \hline \end{array}$

4. $\begin{array}{r} 3\frac{4}{9} \\ 5\frac{1}{9} \\ +4\frac{5}{9} \\ \hline \end{array}$ $\quad$ $\begin{array}{r} 6\frac{4}{11} \\ 9\frac{3}{11} \\ +2\frac{3}{11} \\ \hline \end{array}$ $\quad$ $\begin{array}{r} 7\frac{2}{7} \\ 8\frac{3}{7} \\ +5\frac{2}{7} \\ \hline \end{array}$ $\quad$ $\begin{array}{r} 9\frac{3}{10} \\ 2\frac{3}{10} \\ +4\frac{1}{10} \\ \hline \end{array}$

Adding Fractions with the Same Bottom Numbers.

Sometimes the total of an addition problem can be reduced.

EXAMPLE:

$$\begin{array}{r} \frac{5}{12} \\ +\frac{1}{12} \\ \frac{6}{12} = \frac{1}{2} \end{array}$$

Step 1. Add the top numbers. 5 + 1 = 6.

Step 2. Place the total over the bottom number: $\frac{6}{12}$

Step 3. Reduce the answer: $\frac{6 \div 6}{12 \div 6} = \frac{1}{2}$

Add and reduce.

5. $\frac{6}{8} + \frac{1}{8}$ $\frac{4}{9} + \frac{3}{9}$ $\frac{4}{12} + \frac{5}{12}$ $\frac{8}{15} + \frac{3}{15}$ $\frac{2}{16} + \frac{5}{16}$

6. $\frac{2}{10} + \frac{3}{10} + \frac{9}{10}$ $\frac{4}{15} + \frac{4}{15} + \frac{4}{15}$ $\frac{4}{20} + \frac{3}{20} + \frac{4}{20}$ $\frac{8}{24} + \frac{7}{24} + \frac{2}{24}$ $\frac{6}{27} + \frac{4}{27} + \frac{6}{27}$

7. $5\frac{2}{6} + 6\frac{4}{6}$ $7\frac{5}{12} + 9\frac{3}{12}$ $10\frac{8}{14} + 8\frac{7}{14}$ $13\frac{8}{15} + 29\frac{3}{15}$

8. $9\frac{2}{9} + 8\frac{1}{9} + 7\frac{5}{9}$ $6\frac{4}{10} + 7\frac{2}{10} + 4\frac{3}{10}$ $10\frac{5}{16} + 4\frac{3}{16} + 3\frac{3}{16}$ $12\frac{3}{8} + 9\frac{2}{8} + 10\frac{2}{8}$

Additing Fractio[illegible] with the Same Bottom Numbers

If the total of an addition problem is an improper fraction, change the total to a mixed number.
EXAMPLE:

$4\frac{5}{8}$

$2\frac{7}{8}$

$6\frac{12}{8} = 1\frac{4}{8} = 7\frac{4}{8} = 7\frac{1}{2}$

Step 1. Add the top numbers: $5 + 7 = 12$

Step 2. Place the total over the bottom number: $\frac{12}{8}$

Step 3. Change the improper fraction to a mixed number: $\frac{12}{8} = 1\frac{4}{8}$, and add the whole number to the whole number column: $6 + 1\frac{4}{8} = 7\frac{4}{8}$.

Step 4. Reduce the remainder: $7\frac{4}{8} = 7\frac{1}{2}$.

Add and reduce

9. $\begin{array}{r} \frac{5}{5} \\ +\frac{3}{5} \\ \hline \end{array}$ $\begin{array}{r} \frac{6}{8} \\ +\frac{5}{8} \\ \hline \end{array}$ $\begin{array}{r} \frac{7}{10} \\ +\frac{8}{10} \\ \hline \end{array}$ $\begin{array}{r} \frac{4}{6} \\ +\frac{3}{6} \\ \hline \end{array}$

10. $\begin{array}{r} \frac{11}{12} \\ +\frac{5}{12} \\ \hline \end{array}$ $\begin{array}{r} \frac{9}{14} \\ +\frac{8}{14} \\ \hline \end{array}$ $\begin{array}{r} \frac{7}{8} \\ +\frac{5}{8} \\ \hline \end{array}$ $\begin{array}{r} \frac{9}{15} \\ +\frac{7}{15} \\ \hline \end{array}$

11. $\begin{array}{r} \frac{5}{9} \\ \frac{8}{9} \\ +\frac{8}{9} \\ \hline \end{array}$ $\begin{array}{r} \frac{6}{7} \\ \frac{5}{7} \\ +\frac{2}{7} \\ \hline \end{array}$ $\begin{array}{r} \frac{7}{10} \\ \frac{3}{10} \\ +\frac{5}{10} \\ \hline \end{array}$ $\begin{array}{r} \frac{9}{12} \\ \frac{12}{12} \\ +\frac{7}{12} \\ \hline \end{array}$ $\begin{array}{r} \frac{6}{8} \\ \frac{8}{8} \\ +\frac{7}{8} \\ \hline \end{array}$

12. $\begin{array}{r} 8\frac{3}{8} \\ +3\frac{9}{8} \\ 5\frac{5}{8} \\ \hline \end{array}$ $\begin{array}{r} 9\frac{5}{6} \\ +2\frac{1}{6} \\ 6\frac{4}{6} \\ \hline \end{array}$ $\begin{array}{r} 5\frac{8}{10} \\ +4\frac{9}{10} \\ 7\frac{5}{10} \\ \hline \end{array}$ $\begin{array}{r} 2\frac{7}{12} \\ +8\frac{8}{12} \\ 6\frac{6}{12} \\ \hline \end{array}$

Adding Fractions with Different Bottom Numbers

If the fractions in an addition problem do not have the same bottom numbers (denominators), you must rewrite the problem so that all of the fractions have the same bottom number (called a **common denominator**). This will mean raising at least one of the fractions to higher terms (see page 10).

A common denominator is a number that can be divided evenly by all of the denominators in the problem. The smallest number that can be divided evenly by all of the denominators in the problem is called the **lowest common denominator** or LCD. Sometimes, the largest denominator in the problem will work as the LCD.

EXAMPLE 1

$$\begin{array}{r} \frac{3}{5} = \frac{9}{15} \\ +\frac{4}{15} = \frac{4}{15} \\ \hline \frac{13}{15} \end{array}$$

Step 1. Since 5 divides evenly into 15, 15 is the LCD.

Step 2. Raise $\frac{3}{5}$ to 15ths.

Step 3. Add the new fractions.

Add and reduce.

1. $\begin{array}{r} \frac{3}{4} \\ +\frac{1}{2} \\ \hline \end{array}$ $\quad\begin{array}{r} \frac{2}{3} \\ +\frac{5}{6} \\ \hline \end{array}$ $\quad\begin{array}{r} \frac{7}{8} \\ +\frac{3}{4} \\ \hline \end{array}$ $\quad\begin{array}{r} \frac{5}{6} \\ +\frac{1}{3} \\ \hline \end{array}$ $\quad\begin{array}{r} \frac{5}{9} \\ +\frac{2}{3} \\ \hline \end{array}$

2. $\begin{array}{r} \frac{3}{8} \\ \frac{3}{4} \\ +\frac{1}{2} \\ \hline \end{array}$ $\quad\begin{array}{r} \frac{1}{6} \\ \frac{5}{12} \\ +\frac{3}{4} \\ \hline \end{array}$ $\quad\begin{array}{r} \frac{2}{5} \\ \frac{1}{2} \\ +\frac{9}{10} \\ \hline \end{array}$ $\quad\begin{array}{r} \frac{2}{3} \\ \frac{5}{12} \\ +\frac{1}{4} \\ \hline \end{array}$ $\quad\begin{array}{r} \frac{3}{5} \\ \frac{1}{3} \\ +\frac{4}{15} \\ \hline \end{array}$

3. $\begin{array}{r} \frac{3}{4} \\ \frac{1}{2} \\ +\frac{3}{20} \\ \hline \end{array}$ $\quad\begin{array}{r} \frac{2}{3} \\ \frac{5}{6} \\ +\frac{1}{2} \\ \hline \end{array}$ $\quad\begin{array}{r} \frac{5}{24} \\ \frac{3}{8} \\ +\frac{1}{3} \\ \hline \end{array}$ $\quad\begin{array}{r} \frac{4}{9} \\ \frac{5}{6} \\ +\frac{7}{18} \\ \hline \end{array}$ $\quad\begin{array}{r} \frac{7}{10} \\ \frac{1}{3} \\ +\frac{11}{30} \\ \hline \end{array}$

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4.
$$\begin{array}{rrrr} 14\frac{4}{5} & 7\frac{5}{9} & 9\frac{1}{2} & 3\frac{3}{7} \\ +7\frac{8}{15} & +6\frac{11}{18} & +5\frac{15}{24} & +18\frac{31}{42} \\ \hline \end{array}$$

5.
$$\begin{array}{rrrr} 7\frac{2}{3} & 8\frac{5}{8} & 6\frac{1}{2} & 4\frac{3}{4} \\ 3\frac{1}{2} & 5\frac{1}{4} & 2\frac{9}{10} & 8\frac{5}{12} \\ +9\frac{5}{6} & +4\frac{3}{16} & +7\frac{4}{5} & +3\frac{5}{6} \\ \hline \end{array}$$

FINDING A COMMON DENOMINATOR

Here are some ways of finding a common denominator when the largest denominator in an addition problem doesn't work:

A. Multiply the denominators together.

B. Go through the multiplication table of the largest denominator.

EXAMPLE 2

$$\begin{array}{r} \frac{2}{5} = \frac{8}{20} \\ +\frac{3}{4} = \frac{15}{20} \\ \hline \frac{23}{20} = 1\frac{3}{20} \end{array}$$

Step 1. Multiply the denominators. 5 × 4 = 20. 20 is the LCD.

Step 2. Raise each fraction to 20ths as on page 10.

Step 3. Add as usual (see pages 13, 14, and 15).

Step 4. Change the answer to a mixed number.

EXAMPLE 3

$$\begin{array}{r} \frac{2}{3} = \frac{8}{12} \\ \frac{5}{6} = \frac{10}{12} \\ +\frac{3}{4} = \frac{9}{12} \\ \hline \frac{27}{12} = 2\frac{3}{12} = 2\frac{1}{4} \end{array}$$

Step 1. Go through the multiplication table of the 6's.
6 × 1 = 6, which cannot be divided by 4.
6 × 2 = 12, which can be divided by 3 and 4.

Step 2. Raise each fraction to 12ths.

Step 3. Add.

Step 4. Change the answer to a mixed number and reduce.

Subtracting Fractions with the Same Bottom Numbers

To subtract fractions with the same bottom numbers, subtract the top numbers and put the total over the bottom number.

EXAMPLE

$$\begin{array}{r} \frac{5}{12} \\ -\frac{1}{12} \\ \hline \frac{4}{12} = \frac{1}{3} \end{array}$$

Step 1. Subtract the top numbers. $5 - 1 = 4$.

Step 2. Place the answer over the bottom number: $\frac{4}{12}$

Step 3. Reduce the answer: $\frac{4 \div 4}{12 \div 4} = \frac{1}{3}$

Subtract and reduce.

1. $\begin{array}{r} \text{[redacted]} \\ -\frac{2}{9} \\ \hline \end{array}$ $\qquad \begin{array}{r} \frac{7}{10} \\ -\frac{6}{10} \\ \hline \end{array}$ $\qquad \begin{array}{r} \frac{5}{8} \\ -\frac{1}{8} \\ \hline \end{array}$ $\qquad \begin{array}{r} \frac{4}{13} \\ -\frac{1}{13} \\ \hline \end{array}$ $\qquad \begin{array}{r} \frac{9}{11} \\ -\frac{3}{11} \\ \hline \end{array}$

2. $\begin{array}{r} \frac{13}{15} \\ -\frac{8}{15} \\ \hline \end{array}$ $\qquad \begin{array}{r} \frac{15}{16} \\ -\frac{9}{16} \\ \hline \end{array}$ $\qquad \begin{array}{r} \frac{23}{24} \\ -\frac{11}{24} \\ \hline \end{array}$ $\qquad \begin{array}{r} \frac{11}{19} \\ -\frac{8}{19} \\ \hline \end{array}$ $\qquad \begin{array}{r} \frac{17}{20} \\ -\frac{13}{20} \\ \hline \end{array}$

3. $\begin{array}{r} 8\frac{6}{7} \\ -5\frac{2}{7} \\ \hline \end{array}$ $\qquad \begin{array}{r} 10\frac{5}{8} \\ -\ 4\frac{5}{8} \\ \hline \end{array}$ $\qquad \begin{array}{r} 7\frac{8}{9} \\ -6\frac{5}{9} \\ \hline \end{array}$ $\qquad \begin{array}{r} 13\frac{9}{10} \\ -\ 9\frac{5}{10} \\ \hline \end{array}$

4. $\begin{array}{r} 15\frac{7}{16} \\ -\ 7\frac{3}{16} \\ \hline \end{array}$ $\qquad \begin{array}{r} 14\frac{11}{12} \\ -\ 5\frac{5}{12} \\ \hline \end{array}$ $\qquad \begin{array}{r} 18\frac{9}{13} \\ -\ 9\frac{4}{13} \\ \hline \end{array}$ $\qquad \begin{array}{r} 23\frac{5}{6} \\ -\ 7\frac{1}{6} \\ \hline \end{array}$

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Subtracting Fractions with Different Bottom Numbers

If the bottom numbers in a subtraction problem are different, find the LCD and raise the fractions to higher terms. Then follow the rules on page 21.

EXAMPLE

$$\begin{array}{r} \frac{5}{8} = \frac{15}{24} \\ -\frac{1}{3} = \frac{8}{24} \\ \hline \frac{7}{24} \end{array}$$

Step 1. The LCD is 8 × 3 = 24.

Step 2. Raise each fraction to 24ths.

Step 3. Subtract. 15 − 8 = 7.

Subtract and reduce.

1. $\begin{array}{r} \frac{3}{4} \\ -\frac{1}{2} \\ \hline \end{array}$ $\begin{array}{r} \frac{5}{8} \\ -\frac{1}{4} \\ \hline \end{array}$ $\begin{array}{r} \frac{5}{6} \\ -\frac{1}{3} \\ \hline \end{array}$ $\begin{array}{r} \frac{3}{4} \\ -\frac{3}{16} \\ \hline \end{array}$ $\begin{array}{r} \frac{1}{2} \\ -\frac{3}{10} \\ \hline \end{array}$

2. $\begin{array}{r} \frac{2}{3} \\ -\frac{1}{4} \\ \hline \end{array}$ $\begin{array}{r} \frac{4}{5} \\ -\frac{1}{3} \\ \hline \end{array}$ $\begin{array}{r} \frac{3}{4} \\ -\frac{2}{7} \\ \hline \end{array}$ $\begin{array}{r} \frac{5}{6} \\ -\frac{3}{5} \\ \hline \end{array}$ $\begin{array}{r} \frac{5}{9} \\ -\frac{1}{6} \\ \hline \end{array}$

3. $\begin{array}{r} 8\frac{11}{12} \\ -2\frac{3}{8} \\ \hline \end{array}$ $\begin{array}{r} 9\frac{5}{7} \\ -3\frac{1}{2} \\ \hline \end{array}$ $\begin{array}{r} 12\frac{4}{5} \\ -5\frac{2}{9} \\ \hline \end{array}$ $\begin{array}{r} 11\frac{3}{4} \\ -8\frac{7}{10} \\ \hline \end{array}$

4. $\begin{array}{r} 13\frac{4}{7} \\ -7\frac{3}{8} \\ \hline \end{array}$ $\begin{array}{r} 21\frac{8}{9} \\ -6\frac{1}{4} \\ \hline \end{array}$ $\begin{array}{r} 9\frac{5}{6} \\ -2\frac{2}{5} \\ \hline \end{array}$ 655 $\begin{array}{r} 20\frac{9}{11} \\ -8\frac{2}{3} \\ \hline \end{array}$

Borrowing and Subtracting Fractions

In order to have a fraction to subtract from, you sometimes have to borrow from a whole number. Look at the examples carefully.

EXAMPLE 1. $9 - 6\frac{3}{5}$

Since there is nothing to subtract the $\frac{3}{5}$ from, you have to borrow.

$$\begin{array}{r}
9 = 8\frac{5}{5} \\
\underline{-6\frac{3}{5} = 6\frac{3}{5}} \\
2\frac{2}{5}
\end{array}$$

Step 1. Borrow 1 from the 9 and change the 1 to 5ths because 5 is the LCD.
$1 = \frac{5}{5}$

Step 2. Subtract the top numbers and the whole numbers.

EXAMPLE 2. $12\frac{3}{7} - 8\frac{6}{7}$

Since you cannot take $\frac{6}{7}$ from $\frac{3}{7}$, you have to borrow.

$$\begin{array}{l}
12\frac{3}{7} = 11\frac{7}{7} + \frac{3}{7} \\
\underline{-\ 8\frac{6}{7} \qquad\qquad\quad}
\end{array}$$

Step 1. Borrow 1 from 12 and change the 1 to 7ths because 7 is the LCD.
$1 = \frac{7}{7}$

$$\begin{array}{r}
11\frac{7}{7} + \frac{3}{7} = 11\frac{10}{7} \\
\underline{-\ 8\frac{6}{7} \qquad = \ 8\frac{6}{7}} \\
3\frac{4}{7}
\end{array}$$

Step 2. Add the $\frac{7}{7}$ to $\frac{3}{7}$. $\frac{7}{7} + \frac{3}{7} = \frac{10}{7}$

Step 3. Subtract the top numbers and the whole numbers.

EXAMPLE 3. $8\frac{1}{3} - 4\frac{3}{4}$

$$\begin{array}{r}
8\frac{1}{3} = 8\frac{4}{12} \\
\underline{-4\frac{3}{4} = 4\frac{9}{12}}
\end{array}$$

Step 1. Raise each fraction to 12ths because 12 is the LCD.

$$\begin{array}{l} 8\frac{4}{12} = 7\frac{12}{12} + \frac{4}{12} \\ -4\frac{9}{12} \\ \hline \end{array}$$

Step 2. Borrow 1 from 8 and change the 1 to 12ths.
$1 = \frac{12}{12}$

$$\begin{array}{r} 7\frac{12}{12} + \frac{4}{12} = 7\frac{16}{12} \\ -4\frac{9}{12} \qquad = 4\frac{9}{12} \\ \hline 3\frac{7}{12} \end{array}$$

Step 3. Add the $\frac{12}{12}$ to $\frac{4}{12}$. $\frac{12}{12} + \frac{4}{12} = \frac{16}{12}$

Step 4. Subtract the top numbers and the whole numbers.

Subtract and reduce.

1. $\begin{array}{r} 8 \\ -\frac{5}{6} \\ \hline \end{array}$ $\quad \begin{array}{r} 4 \\ -\frac{3}{7} \\ \hline \end{array}$ $\quad \begin{array}{r} 12 \\ -\frac{1}{2} \\ \hline \end{array}$ $\quad \begin{array}{r} 9 \\ -\frac{2}{5} \\ \hline \end{array}$ $\quad \begin{array}{r} 10 \\ -\frac{8}{11} \\ \hline \end{array}$ $\quad \begin{array}{r} 3\frac{1}{4} \\ -2\frac{1}{2} \\ \hline \end{array}$

2. $\begin{array}{r} 12 \\ -8\frac{3}{7} \\ \hline \end{array}$ $\quad \begin{array}{r} 9 \\ -5\frac{2}{3} \\ \hline \end{array}$ $\quad \begin{array}{r} 7 \\ -5\frac{7}{12} \\ \hline \end{array}$ $\quad \begin{array}{r} 6 \\ -2\frac{5}{9} \\ \hline \end{array}$ $\quad \begin{array}{r} 10 \\ -3\frac{5}{16} \\ \hline \end{array}$ $\quad \begin{array}{r} 9\frac{13}{16} \\ -2\frac{7}{8} \\ \hline \end{array}$

3. $\begin{array}{r} 8\frac{2}{9} \\ -4\frac{5}{9} \\ \hline \end{array}$ $\quad \begin{array}{r} 11\frac{3}{8} \\ -4\frac{7}{8} \\ \hline \end{array}$ $\quad \begin{array}{r} 14\frac{7}{12} \\ -6\frac{11}{12} \\ \hline \end{array}$ $\quad \begin{array}{r} 15\frac{1}{5} \\ -8\frac{4}{5} \\ \hline \end{array}$ $\quad \begin{array}{r} 12\frac{11}{32} \\ -3\frac{1}{2} \\ \hline \end{array}$

4. $\begin{array}{r} 12\frac{7}{15} \\ -7\frac{8}{15} \\ \hline \end{array}$ $\quad \begin{array}{r} 22\frac{4}{7} \\ -6\frac{6}{7} \\ \hline \end{array}$ $\quad \begin{array}{r} 19\frac{1}{3} \\ -12\frac{2}{3} \\ \hline \end{array}$ $\quad \begin{array}{r} 18\frac{3}{16} \\ -10\frac{7}{16} \\ \hline \end{array}$ $\quad \begin{array}{r} 15\frac{1}{2} \\ -9\frac{57}{64} \\ \hline \end{array}$

5. $\begin{array}{r} 20\frac{1}{8} \\ -9\frac{5}{8} \\ \hline \end{array}$ $\quad \begin{array}{r} 36\frac{6}{11} \\ -8\frac{9}{11} \\ \hline \end{array}$ $\quad \begin{array}{r} 15\frac{7}{20} \\ -14\frac{13}{20} \\ \hline \end{array}$ $\quad \begin{array}{r} 30\frac{5}{9} \\ -27\frac{8}{9} \\ \hline \end{array}$

ADDITION & SUBTRACTION FRACTION

WORK PROBLEMS

1. An ICPD worker welds two sections of pipe together. The sections measure 21 1/4 feet and 28 7/8 feet. What is the total length of the welded pole?

2. A blueprint calls for 3 separate pieces of steel measuring 8 3/8 inches, 3 5/16 inches, and 5 1/4 inches in length. How long should the piece of steel be in order that the 3 pieces may be cut from it? Allow 1/2 inch for waste.

3. What is the outside diameter of tubing when the inside diameter is 2 5/8 inches and the wall thickness is 3/16 inch?

4. Find the total thickness of two pieces of steel that Donald Welded together if one is 5/16 inch thick and the other 7/8 inch thick.

5. Find the length of the bolt that should be used to go through a piece of tubing 1/2 inch in diameter, a second piece of tubing 3/4 inch in diameter, a washer 1/16 inch thick, and a nut 1/8 inch thick.

6. Is John correct when he says that 6 28/16 is the same as 7 3/4. Prove it.

7. A length of pipe is measured and found to be 14 20/32 inches. Express this length in a simpler form.

8. The dimensions of a pipe were given as 11 14/16 inches long, and 10 2/4 inches high. What are the dimensions of the pipe if each were expressed in simplest form?

9. An answer to an addition example was written as 3 11/8. It was marked incorrect because it was not in simplest form. How should it have been written?

10. Over the past year, Mr. Thorson has accrued 45 1/4 hours of sick leave. He was recently ill and had to use 22 1/2 hours of his sick leave. How much sick leave does he still have?

Multiplying Fractions

To multiply fractions, multiply the top numbers together and the bottom numbers together.

EXAMPLE

$\frac{3}{5} \times \frac{4}{7} = \frac{12}{35}$

Step 1. Multiply the top numbers.
$3 \times 4 = 12.$

Step 2. Multiply the bottom numbers.
$5 \times 7 = 35.$

Multiply and reduce.

1. $\frac{2}{3} \times \frac{4}{5} =$ $\qquad \frac{5}{7} \times \frac{2}{9} =$ $\qquad \frac{1}{8} \times \frac{7}{10} =$ $\qquad \frac{3}{11} \times \frac{5}{8} =$

2. $\frac{1}{3} \times \frac{1}{5} =$ $\qquad \frac{4}{7} \times \frac{4}{9} =$ $\qquad \frac{5}{6} \times \frac{5}{8} =$ $\qquad \frac{9}{10} \times \frac{1}{4} =$

3. $\frac{7}{9} \times \frac{2}{5} =$ $\qquad \frac{3}{8} \times \frac{7}{8} =$ $\qquad \frac{1}{6} \times \frac{5}{6} =$ $\qquad \frac{8}{9} \times \frac{2}{9} =$

With three fractions, multiply the top numbers of the first two fractions together. Then multiply that answer by the third top number. Do the same for the bottom numbers.

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4. $\frac{3}{5} \times \frac{1}{2} \times \frac{3}{4} =$ $\qquad \frac{5}{7} \times \frac{1}{3} \times \frac{1}{2} =$ $\qquad \frac{2}{3} \times \frac{1}{3} \times \frac{5}{9} =$

5. $\frac{4}{5} \times \frac{4}{5} \times \frac{1}{3} =$ $\qquad \frac{2}{5} \times \frac{7}{9} \times \frac{1}{3} =$ $\qquad \frac{1}{3} \times \frac{4}{7} \times \frac{2}{3} =$

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Canceling and Multiplying Fractions

Canceling is a shortcut in multiplication of fractions. It is just like reducing. It means dividing a top and a bottom number by a figure that goes evenly into both before actually multiplying. You don't have to cancel to get the right answer, but it makes the multiplication easier.

EXAMPLE: $\frac{10}{21} \times \frac{14}{25}$

$$\frac{\overset{2}{\cancel{10}}}{21} \times \frac{14}{\underset{5}{\cancel{25}}} =$$

Step 1. Cancel 10 and 25 by 5.
10 ÷ 5 = 2 and 25 ÷ 5 = 5.
Cross out the 10 and the 25.

$$\frac{\overset{2}{\cancel{10}}}{\underset{3}{\cancel{21}}} \times \frac{\overset{2}{\cancel{14}}}{\underset{5}{\cancel{25}}} = \frac{4}{15}$$

Step 2. Cancel 14 and 21 by 7.
14 ÷ 7 = 2 and 21 ÷ 7 = 3.
Cross out the 14 and the 21.

Step 3. Multiply across by the new numbers.
2 × 2 = 4 and 3 × 5 = 15.

Cancel and Multiply.

EXAMPLE: $\frac{15}{16} \times \frac{2}{3} \times \frac{2}{3} =$

1. $\frac{4}{5} \times \frac{3}{8} =$ $\quad\frac{4}{9} \times \frac{3}{7} =$ $\quad\frac{5}{8} \times \frac{7}{10} =$ $\quad\frac{6}{7} \times \frac{5}{12} =$

2. $\frac{4}{5} \times \frac{1}{6} =$ $\quad\frac{8}{25} \times \frac{15}{13} =$ $\quad\frac{9}{16} \times \frac{12}{11} =$ $\quad\frac{12}{13} \times \frac{1}{15} =$

3. $\frac{4}{9} \times \frac{3}{8} =$ $\quad\frac{5}{18} \times \frac{9}{10} =$ $\quad\frac{7}{33} \times \frac{11}{14} =$ $\quad\frac{5}{6} \times \frac{9}{10} =$

4. $\frac{15}{16} \times \frac{12}{25} =$ $\quad\frac{7}{24} \times \frac{32}{35} =$ $\quad\frac{21}{26} \times \frac{13}{28} =$ $\quad\frac{19}{35} \times \frac{25}{38} =$

Cancelling and Multiplying Fractions

5. $\frac{9}{16} \times \frac{8}{15} =$ $\frac{6}{7} \times \frac{28}{33} =$ $\frac{5}{11} \times \frac{22}{25} =$ $\frac{8}{15} \times \frac{9}{32} =$

6. $\frac{12}{13} \times \frac{3}{16} =$ $\frac{4}{9} \times \frac{9}{14} =$ $\frac{15}{16} \times \frac{16}{21} =$ $\frac{11}{24} \times \frac{8}{11} =$

7. $\frac{7}{8} \times \frac{9}{21} \times \frac{5}{6} =$ $\frac{4}{11} \times \frac{5}{12} \times \frac{11}{25} =$ $\frac{16}{21} \times \frac{14}{15} \times -\frac{3}{4} =$

8. $\frac{9}{16} \times \frac{10}{21} \times \frac{7}{10} =$ $\frac{4}{15} \times \frac{7}{12} \times \frac{3}{8} =$ $\frac{9}{10} \times \frac{1}{6} \times \frac{5}{8} =$

9. $\frac{7}{24} \times \frac{2}{3} \times \frac{16}{42} =$ $\frac{3}{20} \times \frac{18}{25} \times \frac{5}{6} =$ $\frac{11}{12} \times \frac{5}{11} \times \frac{8}{15} =$

10. $\frac{5}{21} \times \frac{1}{9} \times \frac{15}{32} =$ $\frac{6}{17} \times \frac{21}{40} \times \frac{4}{25} =$ $\frac{19}{36} \times \frac{7}{10} \times \frac{3}{7} =$

11. $\frac{11}{39} \times \frac{10}{22} \times \frac{13}{18} =$ $\frac{17}{21} \times \frac{14}{51} \times \frac{7}{11} =$ $\frac{15}{28} \times \frac{7}{16} \times \frac{16}{45} =$

Multiplying Fractions by Whole Numbers

Any whole number can be written as a fraction with a bottom number of 1. For example, 5 is the same as $\frac{5}{1}$.

EXAMPLE: $9 \times \frac{5}{6}$

$$\frac{\overset{3}{\cancel{9}}}{1} \times \frac{5}{\underset{2}{\cancel{6}}} = \frac{15}{2} = 7\frac{1}{2}$$

Step 1. Write 9 as a fraction. $9 = \frac{9}{1}$.

Step 2. Cancel 9 and 6 by 3.

Step 3. Multiply across by the new numbers.

Step 4. Change the improper fraction to a mixed number (see page 11).

Multiply and reduce.

1.	$6 \times \frac{3}{7} =$	$9 \times \frac{1}{4} =$	$\frac{2}{3} \times 10 =$	$3 \times \frac{3}{5} =$
2.	$15 \times \frac{2}{3} =$	$\frac{5}{9} \times 18 =$	$\frac{4}{21} \times 7 =$	$\frac{8}{15} \times 45 =$
3.	$\frac{7}{8} \times 24 =$	$\frac{9}{40} \times 20 =$	$32 \times \frac{7}{16} =$	$12 \times \frac{15}{16} =$
4.	$35 \times \frac{7}{30} =$	$16 \times \frac{7}{24} =$	$\frac{9}{12} \times 36 =$	$2 \times \frac{9}{10} =$

Multiplying with Mixed Numbers

To multiply with mixed numbers, change every mixed number to an improper fraction. (*See page 12.*)

EXAMPLE: $4\frac{1}{2} \times \frac{5}{6} =$

$$\frac{\overset{3}{\cancel{9}}}{2} \times \frac{5}{\underset{2}{\cancel{6}}} = \frac{15}{4} = 3\frac{3}{4}$$

Step 1. Change $4\frac{1}{2}$ to an improper fraction. $4\frac{1}{2} = \frac{9}{2}$

Step 2. Cancel 9 and 6 by 3.

Step 3. Multiply across.

Step 4. Change the improper fraction to a mixed number (see page 11).

Multiply and reduce.

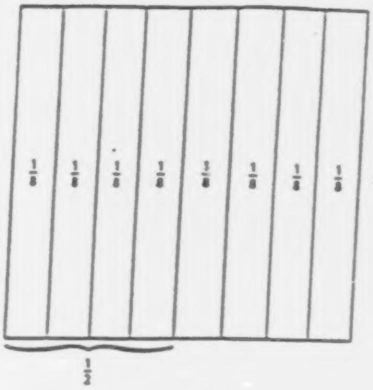
1. $1\frac{1}{2} \times \frac{1}{4} =$ $1\frac{2}{3} \times \frac{2}{7} =$ $2\frac{1}{4} \times \frac{7}{8} =$ $\frac{3}{10} \times 5\frac{1}{2} =$

2. $\frac{4}{9} \times 3\frac{3}{4} =$ $\frac{2}{7} \times 2\frac{5}{8} =$ $4\frac{2}{3} \times \frac{15}{16} =$ $6\frac{3}{7} \times \frac{4}{5} =$

3. $2\frac{1}{3} \times 1\frac{1}{5} =$ $6\frac{2}{3} \times 3\frac{3}{4} =$ $3\frac{5}{7} \times 4\frac{3}{8} =$ $16\frac{1}{3} \times 2\frac{5}{14} =$

4. $3\frac{3}{4} \times \frac{8}{9} \times 1\frac{1}{5} =$ $2\frac{2}{5} \times 3\frac{3}{8} \times 2\frac{7}{9} =$ $2\frac{2}{15} \times 5\frac{1}{4} \times 7\frac{1}{2} =$

Dividing Fractions by Fractions



Suppose a man owned a $\frac{1}{2}$-acre piece of land that he wanted to divide into $\frac{1}{8}$-acre sections for resale. How many $\frac{1}{8}$-acre sections will he have to sell? To answer this question, you have to find out how many $\frac{1}{8}$s are contained in $\frac{1}{2}$.

You know from the work that you've already done with fractions that 1 whole contains $\frac{8}{8}$; therefore, there are four $\frac{1}{8}$-acre sections in $\frac{1}{2}$ acre.

To calculate the answer to any division of fractions problem, there are two rules to remember:

(1) Invert the fraction to the right of the division sign (the divisor). That is, turn the fraction upside down by writing the top number in the bottom position and the bottom number at the top.

In the problem above $\left(\frac{1}{2} \div \frac{1}{8}\right)$, invert the $\frac{1}{8}$ to become $\frac{8}{1}$.

(2) Change the division sign to a multiplication sign and follow the rules of multiplication.

Thus, the problem above becomes:

$$\frac{1}{2} \div \frac{1}{8} = \frac{1}{\underset{1}{\cancel{2}}} \times \frac{\overset{4}{\cancel{8}}}{1} = 4 \text{ sections}$$

In other words, the rules for multiplication and division of fractions are exactly the same as soon as you **invert the fraction to the right of the division sign.**

EXAMPLE: $\frac{3}{4} \div \frac{5}{8}$

$$\frac{3}{\underset{1}{\cancel{4}}} \times \frac{\overset{2}{\cancel{8}}}{5} = \frac{6}{5} = 1\frac{1}{5}$$

Step 1. Invert the fraction on the right $\left(\frac{5}{8}\right)$ to $\frac{8}{5}$ and change the ÷ sign to ×.

Step 2. Cancel 4 and 8 by 4.

Step 3. Multiply across.

Step 4. Change the improper fraction to a mixed number (see page 11).

Divide and reduce.

1. $\frac{3}{7} \div \frac{2}{5} =$ $\frac{4}{9} \div \frac{2}{3} =$ $\frac{5}{12} \div \frac{10}{11} =$ $\frac{7}{15} \div \frac{4}{5} =$

2. $\frac{11}{16} \div \frac{5}{8} =$ $\frac{8}{9} \div \frac{2}{9} =$ $\frac{8}{13} \div \frac{6}{7} =$ $\frac{21}{25} \div \frac{7}{10} =$

3. $\frac{14}{15} \div \frac{16}{27} =$ $\frac{35}{36} \div \frac{25}{28} =$ $\frac{9}{14} \div \frac{1}{2} =$ $\frac{6}{25} \div \frac{1}{5} =$

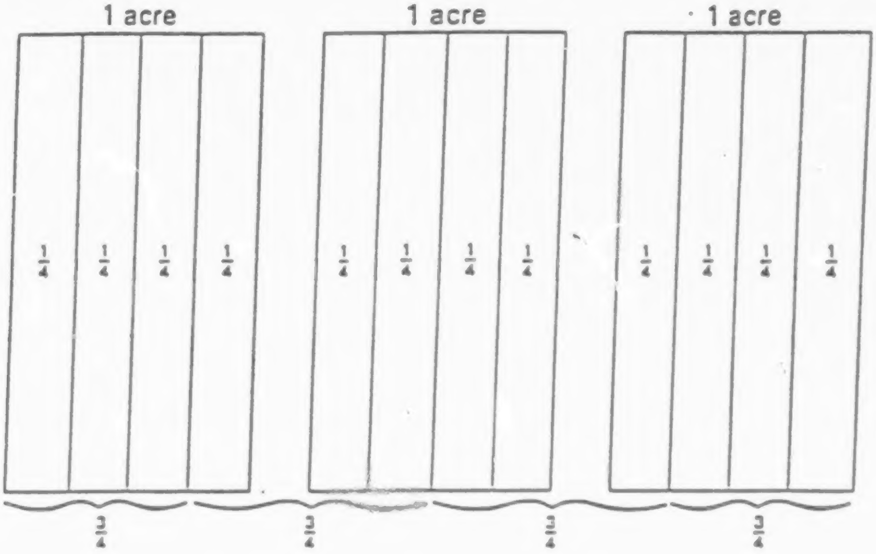
4. $\frac{1}{12} \div \frac{7}{9} =$ $\frac{4}{11} \div \frac{1}{11} =$ $\frac{49}{50} \div \frac{21}{65} =$ $\frac{8}{9} \div \frac{5}{12} =$

5. $\frac{5}{36} \div \frac{11}{42} =$ $\frac{13}{63} \div \frac{7}{54} =$ $\frac{17}{48} \div \frac{1}{24} =$ $\frac{1}{18} \div \frac{8}{27} =$

6. $\frac{3}{10} \div \frac{6}{7} =$ $\frac{5}{11} \div \frac{25}{33} =$ $\frac{12}{19} \div \frac{18}{38} =$ $\frac{16}{21} \div \frac{3}{4} =$

Dividing Whole Numbers by Fractions

Suppose that the owner of the $\frac{1}{2}$-acre piece of land (page 34) has another 3 acres of land that he wants to divide into $\frac{3}{4}$-acre sections for resale. How many $\frac{3}{4}$-acre sections will he have to sell? To answer this question, you have to find out how many $\frac{3}{4}$s are contained in 3 acres.



From the illustration, you can see that he will have four $\frac{3}{4}$-acre sections to sell.

When dividing whole numbers by fractions, write the whole number as a fraction by putting it over 1 ($\frac{3}{1} \div \frac{3}{4}$), invert the fraction to the right of the division sign and multiply:

$$\frac{\overset{1}{\cancel{3}}}{1} \times \frac{4}{\underset{1}{\cancel{3}}} = 4 \text{ sections}$$

EXAMPLE: $8 \div \frac{6}{7}$

$$\frac{\overset{4}{\cancel{8}}}{1} \times \frac{7}{\underset{3}{\cancel{6}}} = \frac{28}{3} = 9\frac{1}{3}$$

Step 1. Write 8 as a fraction: $\frac{8}{1}$

Step 2. Invert $\frac{6}{7}$ and change the ÷ sign to ×.

Step 3. Cancel 8 and 6 by 2.

Step 4. Multiply across.

Step 5. Change the improper fraction to a mixed number. 667

Divide and reduce.

1. $12 \div \frac{2}{5} =$ $\quad 9 \div \frac{1}{3} =$ $\quad 5 \div \frac{3}{4} =$ $\quad 6 \div \frac{2}{3} =$

2. $8 \div \frac{3}{8} =$ $\quad 25 \div \frac{5}{4} =$ $\quad 17 \div \frac{1}{2} =$ $\quad 32 \div \frac{8}{9} =$

3. $45 \div \frac{9}{10} =$ $\quad 49 \div \frac{7}{12} =$ $\quad 36 \div \frac{24}{25} =$ $\quad 54 \div \frac{9}{11} =$

4. $48 \div \frac{8}{15} =$ $\quad 27 \div \frac{3}{4} =$ $\quad 16 \div \frac{3}{5} =$ $\quad 30 \div \frac{20}{21} =$

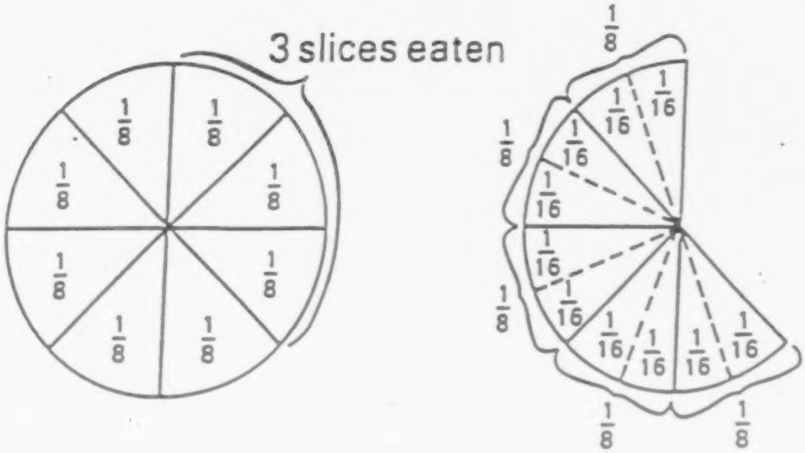
5. $32 \div \frac{4}{21} =$ $\quad 45 \div \frac{18}{19} =$ $\quad 15 \div \frac{10}{11} =$ $\quad 12 \div \frac{9}{10} =$

6. $20 \div \frac{5}{8} =$ $\quad 5 \div \frac{15}{16} =$ $\quad 7 \div \frac{21}{25} =$ $\quad 56 \div \frac{24}{25} =$

Dividing Fractions by Whole Numbers

Suppose that you've eaten 3 slices of an 8-slice pizza. This leaves $\frac{5}{8}$ of the pizza. A friend joins you, and you want to divide the rest of the pizza equally between you. How much pizza would each person get?

To answer this question, you will have to divide the fraction $(\frac{5}{8})$ by the number of people (2) that want to share the pizza.



Notice that each piece is divided into two equal parts. $\frac{1}{2}$ of $\frac{1}{8}$ is $\frac{1}{16}$, making $\frac{10}{16}$. Half of $\frac{10}{16}$ is $\frac{5}{16}$.

When dividing a fraction by a whole number, first write the whole number as a fraction over 1 $(\frac{5}{8} \div \frac{2}{1})$. Then invert that fraction and multiply:

$$\frac{5}{8} \times \frac{1}{2} = \frac{5}{16}$$

EXAMPLE: $\frac{3}{4} \div 6$

$$\frac{3}{4} \div \frac{6}{1} =$$

Step 1. Write 6 as a fraction: $\frac{6}{1}$

$$\frac{\overset{1}{\cancel{3}}}{4} \times \frac{1}{\underset{2}{\cancel{6}}} = \frac{1}{8}$$

Step 2. Invert the fraction $\frac{6}{1}$ to $\frac{1}{6}$ and change the ÷ sign to ×.

Step 3. Cancel 3 and 6 by 3.

Step 4. Multiply across.

Divide and reduce.

1. $\frac{4}{5} \div 4 =$ $\frac{2}{3} \div 6 =$ $\frac{18}{19} \div 9 =$ $\frac{1}{4} \div 2 =$

2. $\frac{1}{3} \div 12 =$ $\frac{3}{4} \div 7 =$ $\frac{5}{6} \div 10 =$ $\frac{12}{13} \div 3 =$

3. $\frac{1}{2} \div 11 =$ $\frac{3}{5} \div 15 =$ $\frac{5}{8} \div 5 =$ $\frac{12}{13} \div 18 =$

4. $\frac{20}{21} \div 24 =$ $\frac{9}{10} \div 36 =$ $\frac{14}{15} \div 35 =$ $\frac{24}{25} \div 40 =$

5. $\frac{3}{5} \div 9 =$ $\frac{10}{13} \div 30 =$ $\frac{12}{17} \div 36 =$ $\frac{21}{22} \div 28 =$

6. $\frac{4}{7} \div 44 =$ $\frac{15}{16} \div 45 =$ $\frac{5}{18} \div 15 =$ $\frac{7}{24} \div 35 =$

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Dividing with Mixed Numbers

To divide with mixed numbers, first change every mixed number to an improper fraction (see page 12). Also, be sure to write whole numbers as fractions over 1. Then invert the fraction to the right of the division sign and finish the problems as on pages 34, 36, and 38.

EXAMPLE: $2\frac{1}{3} \div \frac{1}{4}$

$$\frac{7}{3} \div \frac{1}{4}$$

$$\frac{7}{3} \times \frac{4}{1} = \frac{28}{3} = 9\frac{1}{3}$$

Step 1. Change $2\frac{1}{3}$ to an improper fraction: $\frac{7}{3}$

Step 2. Invert the fraction $\frac{1}{4}$ to $\frac{4}{1}$ and change the ÷ sign to ×.

Step 3. Since nothing can be canceled, multiply across.

Step 4. Change the improper fraction to a mixed number.

Divide and reduce.

1. $1\frac{1}{2} \div \frac{3}{4} =$ $\quad 1\frac{2}{3} \div \frac{2}{3} =$ $\quad 2\frac{3}{4} \div \frac{5}{8} =$ $\quad 4\frac{1}{3} \div \frac{2}{9} =$

2. $2\frac{2}{5} \div 6 =$ $\quad 3\frac{1}{3} \div 4 =$ $\quad 1\frac{5}{7} \div 9 =$ $\quad 2\frac{2}{9} \div 15 =$

3. $\frac{5}{8} \div 1\frac{1}{4} =$ $\quad \frac{14}{15} \div 1\frac{1}{6} =$ $\quad \frac{7}{12} \div 2\frac{1}{2} =$ $\quad \frac{9}{16} \div 3\frac{3}{4} =$

4. $12 \div 1\frac{3}{5} =$ $\quad 20 \div 2\frac{2}{7} =$ $\quad 9 \div 1\frac{7}{8} =$ $\quad 24 \div 1\frac{7}{11} =$

5. $3\frac{3}{4} \div 1\frac{1}{8} =$ $4\frac{1}{2} \div 1\frac{1}{6} =$ $2\frac{3}{4} \div 1\frac{7}{8} =$ $1\frac{7}{9} \div 2\frac{2}{9} =$

6. $5\frac{1}{4} \div 4\frac{2}{3} =$ $6\frac{1}{2} \div 3\frac{1}{4} =$ $5\frac{3}{5} \div 3\frac{3}{7} =$ $4\frac{3}{8} \div 1\frac{9}{16} =$

7. $5\frac{2}{3} \div 1\frac{8}{9} =$ $4\frac{2}{5} \div 8\frac{4}{5} =$ $3\frac{5}{9} \div 1\frac{13}{15} =$ $10\frac{2}{3} \div 2\frac{2}{3} =$

8. $3\frac{3}{5} \div 1\frac{7}{20} =$ $6\frac{3}{5} \div 2\frac{1}{5} =$ $3\frac{3}{7} \div 1\frac{11}{21} =$ $2\frac{4}{13} \div 2\frac{1}{4} =$

9. $4\frac{1}{3} \div 2\frac{1}{7} =$ $6\frac{7}{8} \div 5\frac{1}{4} =$ $9\frac{7}{10} \div 1\frac{4}{5} =$ $8\frac{2}{3} \div 5\frac{1}{12} =$

10. $7\frac{1}{2} \div 3\frac{1}{5} =$ $3\frac{5}{9} \div 2\frac{5}{18} =$ $5\frac{5}{6} \div 3\frac{5}{12} =$ $10\frac{5}{8} \div 4\frac{1}{2} =$

MULTIPLICATION & DIVISION FRACTION WORK PROBLEMS

1. Valmont Safety Training schedules each class at 3/4 hour. How many classes can they schedule in a 7 1/2 hour day?

2. Don wants to increase the following recipe for Valmont's Cafeteria by 1/2. He wants to make enough for 60 instead of 40. Each quantity can be multiplied by 1 1/2. How much of each ingredient will be needed?

RECIPE

Noodles	12 1/2 pounds
Eggs	18
Cheese	4 1/4 pounds

Makes 40 Servings

3. The Valmont Hiking club walked 3 2/10 miles in 1 hour and 15 minutes. Is their rate faster than 2 1/2 miles per hour. (Find the rate of travel by dividing the number of miles traveled by the time in hours.)

4. Valmont's office supplies manager finds 20 1/4 boxes of candy bars in the supply room! She decides to give each department 2 1/4 boxes. How many departments will be treated with candy bars?

5. Weeds in the Valmont storage areas grow at the rate of 5 1/2 inches per week. If this growth rate continues, how much will the weeds grow in 5 1/2 weeks?

6. Steve builds bird feeders that he sells in craft shops when not putting in overtime at Valmont. He is working to complete an order for 21 feeders. He can make 3 1/2 feeders per hour and has been working 4 1/2 hours. How much longer will it take him to complete this order?

7. The Quality Control Department selected circuits to test throughout the 7 1/2 hour work day. One day they tested 17 1/2 dozen light bulbs. How many bulbs did they test per hour?

8. An assembly line can turn out 8 2/3 completed poles in one working day. How many can be completed in 5 1/2 working days?

9. It was vacation time for Jim. From his house to his favorite casino he'd have to drive 276 miles. If he's already driven 2/3 of the distance, how far has he gone?

10. Out of a 48 hour work week, Jack worked 4/5 of the time. How many hours did he work?

FRACTION REVIEW

1. $\begin{array}{r} 3\frac{3}{7} \\ + \quad 18\frac{31}{42} \\ \hline \end{array}$

2. $\begin{array}{r} 14\frac{4}{5} \\ + \quad 7\frac{8}{15} \\ \hline \end{array}$

3. $\begin{array}{r} \frac{1}{6} \\ \frac{5}{12} \\ + \frac{3}{4} \\ \hline \end{array}$

4. $\begin{array}{r} 15\frac{1}{2} \\ - \quad 9\frac{57}{64} \\ \hline \end{array}$

5. $\begin{array}{r} 9 \\ - \quad 5\frac{2}{3} \\ \hline \end{array}$

6. $\begin{array}{r} 12\frac{11}{32} \\ - \quad 3\frac{1}{2} \\ \hline \end{array}$

7. $\frac{9}{10} \times \frac{1}{6} \times \frac{5}{8} =$

8. $3\frac{5}{7} \times 4\frac{3}{8} =$

9. $\frac{11}{40} \times 20 =$

10. $9 \div 1\frac{7}{8} =$

11. $\frac{1}{18} \div \frac{8}{27} =$

12. $10\frac{5}{8} \div 4\frac{1}{2} =$

NAME: ____________

LEARNING GUIDE AVG: _____

DECIMALS

LESSONS INCLUDED:

1. **Addition of decimals.**
2. **Subtraction of decimals.**
3. **Multiplication of decimals.**
4. **Division of Decimals.**
5. **Work place problems.**

Week 2 Day 2
04/25/94

Valmont 2000

Math Packet (Decimals)

Exercise 1
Addition of Decimals

1. $ 14.27
12.90
+10.00

2. $15.60
6.42
+ .08

3. $ 37.95
62.47
+10.18

4. $ 23.00
17.98
+24.65

5. $429.24
28.82
+ .23

6. .5
.9
+.6

7. 1.4
2.9
+6.8

8. 23.78
1.09
+4.86

9. 23.687
8.940
+15.078

10. 19.072
8.245
+27.187

11. 6.9 + 6.87 + 4.072 =

12. 34.2 + 19.5 + 24.785 =

13. .07 +.217 +5 =

14. 52 + .79 + 23.8 =

15. 11.24 + 6.8 + 9.9 =

16. 23.85 + 17.086 + 4.602 =

17. 2.487 + 52.9 + 82.678 =

18. 3.18 + .006 + 24.4 =

19. 6 + .7 =

20. 4.2 + 23 =

21. .082 + 19 =

22. 15 + 7.94 =

23. 12.98 + 63 =

24. 27 + 14.897 =

25. .45 + 1.2 =

26. 37. + 52.8 =

27. 2.4 + 32.05 =

28. 15.76 + 6.3 =

29. 87.9 + .12 =

30. 24 + 17.7 =

31. 1.7 + 23.14 =

32. 37.62 + .976 =

33. 14.7 + 15.76 =

34. 97.36 + 23.9 =

35. 52.76 + 24.987 =

36. .0762 + 1.24 =

37. 72.85 + 4.9872 =

38. 15.82 + 762.9

39. $ 2.00
4.95
+2.45

40. $14.82
.07
+44.20

41. $31.92
92.31
+ 2.99

42. $ 15.16
6.89
+12.72

43. $327.50
30.00
+ 49.89

44. .9
.6
+.4

45. .1
4.6
+5.9

47. .27
1.07
+2.96

48. .076
.237
+.842

49. 2.94
5.80
+12.72

50. .7 + 6.2 + .09 =

51. 16.5 + .72 +.927 =

52. 32 + .07 + 2.7 =

53. 3.5 + .924 + .28 =

54. 115.7 + 24.48 + 3.087 =

55. 56.82 + 49.706 + 10.009 =

56. 52.12 + 6.09 + 82 =

57. 4.276 + 42.76 + 29.1 =

EXERCISE 2
SUBTRACTION OF DECIMALS

58. 1.5
-.6

59. 24.0
-18.6

60. $6.49
- 5.82

61. 1.002
-.003

70. 342.6
- 247.7

62. 101.01
- 10.11

63. $4,298.72
- 3,249.81

64. 12.745
- 6.806

65. .8701
- .5823

66. 42.701
- 32.612

66. 17.01 - .246 =

67. .0742 - .0693 =

68. 9.74 - 8.987 =

69. 38.17 - 29.384 =

70. $100.02 - $89.03 =

71. 428.002 - 227.608 =

72. 87.486 - 59.6 =

74. $\begin{array}{r} 5.6 \\ \underline{-4} \end{array}$

75. $\begin{array}{r} 8.8 \\ \underline{-\ 4.56} \end{array}$

76. $\begin{array}{r} 8 \\ \underline{-\ 7.8} \end{array}$

77. $\begin{array}{r} 6.2 \\ \underline{-\ 5.29} \end{array}$

78. $\begin{array}{r} 8.01 \\ \underline{-\ 6.6} \end{array}$

79. $\begin{array}{r} 5.2 \\ \underline{-\ 1.96} \end{array}$

80. $\begin{array}{r} 7.2 \\ \underline{-\ 2.05} \end{array}$

81. $\begin{array}{r} 8.42 \\ \underline{-\ 4.7} \end{array}$

82. $\begin{array}{r} 6.97 \\ \underline{-\ 5.9} \end{array}$

83. $\begin{array}{r} 4.1 \\ -\ \underline{2.78} \end{array}$

84. $\begin{array}{r} 15.9 \\ \underline{-\ 14.99} \end{array}$

85. $\begin{array}{r} 40.76 \\ \underline{-10.9} \end{array}$

86. $\begin{array}{r} \$184.75 \\ \underline{-\$75.90} \end{array}$

87. $\begin{array}{r} .4 \\ \underline{-.40} \end{array}$

88. $\begin{array}{r} 74.77 \\ \underline{-\ 64.7} \end{array}$

89. $\begin{array}{r} 1.516 \\ -\underline{1.42} \end{array}$

90. $\begin{array}{r} 63.82 \\ \underline{-20.754} \end{array}$

91 $\begin{array}{r} 82.1 \\ \underline{-\ 7.607} \end{array}$

92. $\begin{array}{r} 92.22 \\ \underline{-30.072} \end{array}$

93. $\begin{array}{r} 84.072 \\ \underline{-\ 6.5} \end{array}$

94. $\begin{array}{r} .1701 \\ \underline{-.019} \end{array}$

95. $\begin{array}{r} 10.2 \\ \underline{-\ 4.783} \end{array}$

96. $\begin{array}{r} 38.701 \\ \underline{-14.8} \end{array}$

97. $\begin{array}{r} 247.9 \\ \underline{-\ 124.676} \end{array}$

98. 4.7 - 3 =

99. 9 - 8.7 =

100. 7.01 - .2 =

101. 6.87 - 5.9 =

102. 23.6 - 15.87 =

103. 9 - 9.0 =

104. 27.56 = 11.2 =

105.23.72 - 10.842 =

106 93.1 - 74.076 =

107. 3.600 -.05 =

108. 2.2 - .7642 =

109. 427.62 - 374.9 =

110. .1028 - .04 =

112. 127 - .172 =

113. .386 - .2976 =

Week 2 Day 2
04/25/94

114. 809.27 - 46.287 = 115. 1.8 - .0764 = 116. 24.891 - 12.9 =

118. .872 - .0047 =

EXERCISE 3

Addition and Subtraction of Decimals

119. Mike has $318.95 in a checking account. He writes checks for the following amounts $17.35, $135.06, and $50.00. He makes a deposit of $225.00. How much does he have in his account after these transactions?

120. Marty earned $915.92 over a two week period. How much did she have left after 114.27 and 66.27 were deducted for taxes?

121. Horance, Valmont's star driver's odometer read 68,524.8 in Topeka. In Wichita, it read 68,674.4. How many miles did he drive between Topeka and Wichita?

122. Susan has driven 225.8 miles. how many miles does she have left to drive if she planned to drive 450 miles?

123. Tony has $587.03 in his savings account. How much will he have if he withdraws $190.95?

124. George is an irrigation salesman. Last month he earned $2104.17 in salary and $713.42 in commission. This month he earned $2104.17 in salary and only $334.23 in commission. What is the total of his earnings for the last two months?

125. The reading on the mileage gauge in Steve's car was 54,398.6 on Monday morning. During Monday afternoon and evening he drove 346.9 miles. What was the reading on the gauge Monday night?

126. The average man is expected to live 69.3 years. The average woman is expected to live 76.4 years. One the average, how much longer do women live?

Valmont 2000
Math Packet (Multiplication/Division of Decimals)

Part A
Multiplication of Decimals

1. 2.7 x.9

2. 30. x .10

3. .86 x 5

4. 2.5 x 8

5. 5.01 x.6

6. 15.4 x .7

7. .28 x4.8

8. 42.7 x6.3

9. .07 x 9.2

10. 4.29 x 23.5

11. .02 x.19

12. .17 x.5

13. .342 x.187

14. 1.702 x.006

15. .008 x.006

Circle the Correct Answer

16. 45 x 9.2 = 4140 414 41.4

17. 26 x .07 = 182 18.2 1.82

18. 300 x 3.7 = 111 1110 11100

19. 97 x .423 = 410.31 41.031 4103.1

20 24.6 x 7 = 17.22 1722 172.2

Place the decimal, add any zeros needed

21. .02 x .05 = ________

22. 42 x .0006 = ________

23. .87 x .572 = ________

24. .300 x 3.5 = ________

25. .004 x .005 = ________

Solve the problems.

26. 64.12 x 4.5 = 2 8 8 5 4

27. 64. 12 x .45 =

28. 6.412 x 45 =

29. 6.412 x .45 =

30. 674.2 x 10.2 = 687684

31. 6.724 x 1.02 =

32. .6724 x .102 =

33. .6724 x 10.2 =

34. .3 x 3.4 = 1 0 2

35. 42 x .0006 = 02520

36. 9.3 x 4.75 = 4 4 1 7 5

8. .59 x .69 = 4 0 7 1

39. .06 x .02 = 00120

40. 51.5 x .46 = 2 3 6 9

41. 47 x 13 = 6 1 1

42. .08 x .521 = 041680

Circle the correct answer.

43. .21 x 6 = 126 12.6 1.26

44. .02 x .17 = .34 .034 .0034

45. 3 x .08 = 24 2.4 .24

46. 16.7 x .9 = 1503 150.3 15.03

47. .9 x .8 = 72 7.2 .72

48. 5.2 x 3.8 = 197.6 1976 1.976

49. .002 x 100 = .2 .02 .002

50. 86 x .5 = 43 43.0 430

51. .19 x .47 = .0893 .893 8.93

52. 80 x 1.0 = 80 8 .80

1. 42 x .6

2. 37 x .5

3. 108 x .7

4. 82 x .4

5. 3.7 x 6

6. 2.4 x 9

7. 4.2 x .4

8. 3.6 x .8

9. 541 x .06

10 7.7 x .8

11. 1.94 x 5

12. 2.37 x 4

13. .24 x 6

14. 8.74 x .06

15. .248 x 7

16. 6.42 x .17

17. 50.6 x .74

18. 3.76 x .05

19. 34.2 x 3.4

20. 8.01 x .27

(Round To The Nearest Thousandth)

21. $7\overline{)1}$

22. $8\overline{)6.92}$

23. $12\overline{)412.7}$

26. $42\overline{)301.7}$

25. $30\overline{)17.42}$

26. $38\overline{)24.7}$

27. $27\overline{)342.7}$

28. $18\overline{)163.08}$

29. $41\overline{)1.72}$

30. $32\overline{)97.84}$

31. $9\overline{)1.082}$

32. $50\overline{)12.05}$

33. $18\overline{)268.6}$

37. $37\overline{)98.73}$

38. $83\overline{)83.83}$

39. $43\overline{)287.3}$

40. $20\overline{)2.876}$

41. $8\overline{)200.9}$

42. $14\overline{)9.8}$

43. $62\overline{)9.34}$

44. $7\overline{)15}$

45. $302\overline{)586.76}$

Show remainders as decimals.

46. $5\overline{)18}$ 47. $2\overline{)21}$ 48. $4\overline{)27}$

51. $6\overline{)33}$ 50. $5\overline{)46}$ 51. $2\overline{)37}$

52. $4\overline{)41}$ 53. $5\overline{)62}$ 54. $6\overline{)57}$

55. $10\overline{)88}$ 56. $15\overline{)216}$ 57. $80\overline{)700}$

58. $45\overline{)342}$ 59. $36\overline{)477}$ 60. $95\overline{)589}$

61. $12\overline{)771}$ 62. $28\overline{)602}$ 63. $70\overline{)861}$

Multiply and Divide Decimals

1. What is the total thickness of 15 metal sheets, if each sheet is 0.055 inches thick?

2. What is the cost of 24 gallons of paint at $9.79 per gallon?

3. Over a five week period, Carl earned the following amount of commission: $398.15, $617.42, $458.02 and $571.94, and $437.82. What was his average per week?

4. Marty bought 24 3/4 feet of oak shelving. How much did he pay per foot if he total bill was $102.96?

5. A case of paint weights 436 pounds. One pound equals .45 kilograms. What is the weight of the case in kilograms?

6. For Ron's birthday he bought 4.5 pounds of Taffy and 6.3 pounds of chocolate to share with the rest of the shop. Ron got into the candy early and ate .8 pounds of taffy and 1.2 pounds of chocolate. If there were a total of 10 people in his shop, how many pounds will each co-worker get?

7. Valmont's public relations department sold raffle tickets amounting to $12,309.75. Four different charities were to receive money from this raffle. After expenses of $169.80 and $ 3698.43 were deducted, how much did each charity receive?

8. Last year an average person ate 27.9 pounds of cheese and 16.2 pounds of butter. How many pounds of cheese will an average family of 4 eat?

5.0
+.1995

$.08\overline{)3.245}$

SOLVING

DECIMAL

PROBLEMS

.4
X.6

4.7626
-.4320

KEY VOCABULARY

FOR

DECIMALS

Decimal: A fraction whose denominator is 10 or some multiple of 10.

A decimal number may have a whole number part and a fraction part.

Example: 125.431 Means:

1	2	5	4	3	1
1X100	2X10	5X1	$4X\frac{1}{10}$	+ $3X\frac{1}{100}$	$1X\frac{1}{1000}$

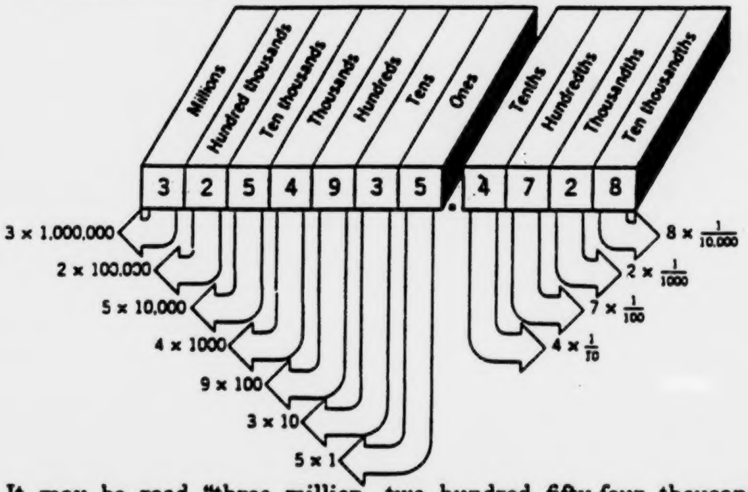
Decimal Point (.): A way to separate the whole number part from the fraction part.

The decimal point is read as "and".

Rounding: Used to estimate an answer to a problem.

HOW TO NAME DECIMAL NUMBERS

The decimal number 3,254,935.4728 should be interpreted as


Millions
Hundred thousands
Ten thousands
Thousands
Hundreds
Tens
Ones
Tenths
Hundredths
Thousandths
Ten thousandths
3
2
5
4
9
3
5
.
4
7
2
8
3 × 1,000,000
2 × 100,000
5 × 10,000
4 × 1000
9 × 100
3 × 10
5 × 1
8 × 1/10,000
2 × 1/1000
7 × 1/100
4 × 1/10

It may be read "three million, two hundred fifty-four thousand, nine hundred thirty-five, and four thousand seven hundred twenty-eight ten thousandths."

Notice that the decimal point is read "and."

It is useful to recognize that, for example, the digit 8 represents 8 ten-thousandths or $\frac{8}{10,000}$ and the digit 7 represents 7 hundredths or $\frac{7}{100}$. Most often, however, this number is read more simply as "three million, two hundred fifty-four thousand, nine hundred thirty-five, *point* four, seven, two, eight." This way of reading the number is easiest to write, to say, and to understand.

■ ■ ■ ■ ■ ROUNDING

Rounding is very helpful in estimating the answer to a problem. For example, suppose you are at a grocery store and you pick up three items priced at $4.95, $3.15, and $2.89. You need to estimate the total to make sure you have enough money. Quickly, you round the amounts to the nearest whole dollar and add the rounded amounts. This sum will be an estimated total.

$$\begin{array}{rl} \text{\$4.95 is close to} & \text{\$ } 5 \\ \text{\$3.10 is close to} & \text{\$ } 3 \\ \text{\$2.89 is close to} & \underline{\text{\$ } 3} \\ & \text{\$11 (Estimate)} \end{array}$$

$$\begin{array}{r} \text{\$4.95} \\ 3.10 \\ +\ 2.89 \\ \hline \text{\$10.94} \end{array} \text{ (Actual)}$$

Follow these steps to round to a given place value:

- Find the place value that you are going to round to.
- Add 1 to that place value if the digit immediately to the right is 5 or greater. Do not add 1 if the digit to the right is less than 5.
- If you are rounding to a whole number place value, replace all the whole number digits to the right with zeros and drop any decimal numbers.
- If you are rounding to a decimal place value, drop all digits to the right of the place you rounded to.

Examples:

15,640 rounded to the thousands place is 16,000
15,340 rounded to the thousands place is 15,000
17.229 rounded to the hundredths place is 17.23
3.5067 rounded to the tenths place is 3.5
19.5 rounded to the tens place is 20
3.683 rounded to the ones place is 4

ADDITION OF DECIMALS

Numbers with decimals are added in the same way as whole numbers. Decimals must also be aligned in columns so that the decimal points line up vertically. If an addend consists of a whole number only, place a decimal point to the right of the ones column. You can add or drop zeros to the right of the last decimal digit without changing the value of the number. For example, the number 15.6 can be written 15.60 or 15.60000000.

Follow these steps to add decimals:

- Align the addends so that the decimal points line up vertically.
- Add zeros to the right of the last decimal digits as needed so that each number has the same number of decimal digits.
- Add as you would whole numbers.
- Place the decimal point in the sum in line with the decimal points in the addends.

Example: 4.7 + 82.13 + 0.005 + 1.8 =

Step 1: Align the addends.	*Step 2:* Add 0s the right of the last decimal digit.	*Step 3:* Add, then place the decimal point in the sum.
4.7	4.700	$\overset{1}{4}.700$
82.13	82.130	82.130
0.005	0.005	0.005
+ 1.8	1.800	1.800
		88.635

Example: Beverly paid $1,805.64 for a computer and printer. She also paid $117.37 in sales tax. What is the total cost of her purchase?

$$\begin{array}{r} \$1,8\overset{1}{0}\overset{1}{5}.\overset{1}{6}4 \\ +\quad 117.37 \\ \hline \$1,923.01 \end{array}$$

The total cost is $1,923.01.

■ ■ ■ ■ ■ SUBTRACTION OF DECIMALS

Follow these steps to subtract decimals:

- Align the numbers so that the decimal points line up vertically.
- Add zeros to the right of the last decimal digits as needed so that each number has the same number of decimal digits.
- Subtract as you would whole numbers.
- Place the decimal point in the answer in line with the decimal points in the problem.

Example: 7.9 − 2.492 =

Step 1: Align the decimal points.

$$\begin{array}{r} 7.9 \\ -\ 2.492 \\ \hline \end{array}$$

Step 2: Add zeros.

$$\begin{array}{r} 7.900 \\ -\ 2.492 \\ \hline \end{array}$$

Step 3: Subtract, then place the decimal point in the answer.

$$\begin{array}{r} 7.\overset{8}{\cancel{9}}\overset{9}{\cancel{0}}\overset{1}{0} \\ -\ 2.492 \\ \hline 5.408 \end{array}$$

Example: Lisa bought a sweatshirt for \$11.56. How much change should she receive if she gives the clerk \$20.00?

$$\begin{array}{r} \$\overset{1}{\cancel{2}}\overset{9}{\cancel{0}}.\overset{9}{\cancel{0}}\overset{1}{0} \\ -\ 11.56 \\ \hline \$8.44 \end{array}$$

Lisa will receive \$8.44 change.

■ ■ ■ ■ ■ MULTIPLICATION OF DECIMALS

Basic Multiplication When you multiply decimals, you do not need to align the decimal points. The position of the decimal point does not affect the multiplication process. The decimal point is positioned in the product after the numbers are multiplied.

To multiply decimals, follow these steps:

- Multiply as you would multiply whole numbers.
- Count the total number of decimal places in the factors.
- Count from right to left the same number of decimal places in the answer and place the decimal point in that position. The number of decimal places in the product should equal the total number of decimal places in the two factors.

Example: 24.76 × 1.3 =

Step 1: Multiply.	*Step 2:* Count the decimal places in the factors.		*Step 3:* Place decimal in answer.
24.76	24.76	(2 places)	24.76
× 1.3	× 1.3	(1 place)	× 1.3
7428	7428	(3 places total)	7 428
2476	2476		24 76
32188	32188		32.188

Example: Hargiss Transfer pays 22 cents a mile for preventive maintenance. How much will the company pay for maintenance for a 1,875-mile trip?

$$\begin{array}{r l}
1{,}875 & \leftarrow \boxed{\text{0 places}} \\
\times\ \$.22 & \leftarrow \boxed{\text{2 places}} \\ \hline
37\ 50 & \\
375\ 0 & \\ \hline
\$412.50 & \leftarrow \boxed{\text{2 places}}
\end{array}$$

The company will pay $412.50.

- When there are not enough digits in the answer, add zeros to the left of the last digit before placing the decimal point. These zeros act as placeholders and affect the value of the decimal.

Example: 5.08 × .004 =

Step 1: Multiply.	*Step 2:* Count the decimal places.		*Step 3:* Add zeros and decimal point.	
5.08	5.08	(2 places)	5.08	
× .004	× .004	(1 place)	× .004	
2032	2032	(3 places total)	.02032	(5 places)

- When multiplying money amounts, it is often necessary to round to the nearest whole cent (the hundredths place).

Example:

$$\begin{array}{r}
\$2.03 \\
\times\quad .15 \\ \hline
1015 \\
203 \\ \hline
\end{array}$$

■ ■ ■ ■ ■ DIVISION OF DECIMALS

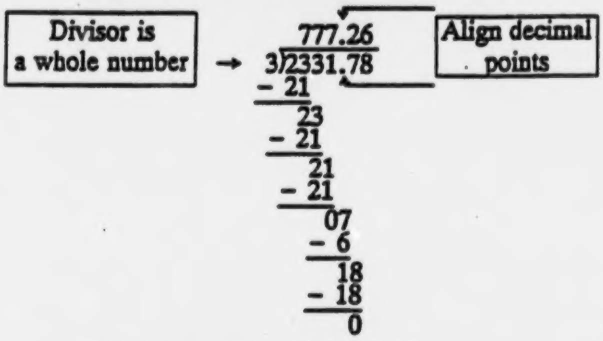
Basic Division Decimals are divided in much the same way as whole numbers. The only differences are in the expression of the remainder and the placement of the decimal point.

In Chapter 1, you expressed a remainder as a whole number written after the letter *R*. In most problems, the division process can be continued until the division ends evenly. The decimal part of the quotient is the remainder. In some problems, however, the division process would continue forever with the same number or numbers repeating in the quotient. This kind of number is called a *repeating decimal*. When a division problem results in a repeating decimal, you will need to round the answer to the decimal place required by the problem or situation.

Follow these steps to divide decimals when the divisor is a whole number:

- Divide as you would whole numbers.
- Place the decimal point directly above the decimal point in the dividend.

Example: The total of Marvin's expenses for the last 3 weeks is $2,331.78. What is the average amount per week?



The average amount is $777.26.

Follow these steps to divide decimals when the divisor has a decimal:

- Make the divisor into a whole number by moving the decimal point to the right of the last digit. Count the number of places you had to move it.
- Move the decimal point in the dividend the same number of places to the right. Add zeros to the dividend if necessary.
- Divide as you would whole numbers.

Example: Divide 36 by 4.5.

Step 1: Make divisor a whole number.

$4.5\overline{)36}$

↑

1 place

Step 2: Move decimal in dividend.

$4.5\overline{)36.0}$

↑

1 place
Add zero

Step 3: Divide.

$$\begin{array}{r} 8 \\ 45\overline{)360.} \\ \underline{360} \\ 0 \end{array}$$

Remember that adding zeros to the right of the last decimal digit does not change the value of the number. To continue the division process, keep adding zeros to the right of the decimal or the right of the last decimal digit of the dividend. Continue dividing until the divisor divides evenly into the dividend, or until you have enough decimal digits to round to a desired place.

Example: Divide 36.9 by 4.5.

Step 1: Move decimal point.

$4.5\overline{)36.9}$

Step 2: Divide.

$$\begin{array}{r} 8 \\ 45\overline{)369} \\ \underline{360} \\ 9 \end{array}$$

Step 3: Add decimal point and zero.

$$\begin{array}{r} 8. \\ 45\overline{)369.0} \\ \underline{360} \\ 9\,0 \end{array}$$

Step 4: Continue to divide.

$$\begin{array}{r} 8.2 \\ 45\overline{)369.0} \\ \underline{360} \\ 9\,0 \\ \underline{9\,0} \\ 0 \end{array}$$

Example: Divide 100 by 3. Round to the nearest hundredth.

Step 1: Divide.

$$\begin{array}{r} 33 \\ 3\overline{)100} \\ \underline{9} \\ 10 \\ \underline{9} \\ 1 \end{array}$$

Step 2: Add decimal point and zero.

$$\begin{array}{r} 33 \\ 3\overline{)100.0} \\ \underline{9} \\ 10 \\ \underline{9} \\ 10 \end{array}$$

Step 3: Divide to thousandths.

$$\begin{array}{r} 33.333 \\ 3\overline{)100.000} \\ \underline{1} \\ 10 \\ \underline{9} \\ 10 \\ \underline{9} \\ 10 \\ \underline{9} \\ 10 \\ \underline{9} \\ 1 \end{array}$$

Step 4: Round.

$33.333 \approx 33.33$

↑

≈ means "approximately equal to"

CHANGING DECIMALS TO FRACTIONS

Decimals can also be written as fractions. The decimal number without the decimal point becomes the numerator of the fraction. The place value name of the last decimal digit to the right becomes the denominator and then the fraction is reduced to lowest terms.

To convert a decimal to a fraction:

- Write the decimal, without the decimal point, above the fraction line.
- Write the place value of the last decimal digit on the right below the fraction line.
- Reduce the fraction to lowest terms.

Example: Change 0.625 to a fraction.

$\frac{625}{1000}$ The decimal becomes the numerator. The 5 is in the thousandth splace, so the denominator is 1,000.

$\frac{625}{1000} \div \frac{125}{125} = \frac{5}{8}$ Reduce the fraction.

CHANGING FRACTIONS TO DECIMALS

A part of something can be written as either a fraction or a decimal. Half of a mile (or half of anything) can be written 0.5 or $\frac{1}{2}$. Sometimes you will need to write a fraction in decimal form. Fractions are converted to decimals using division. (Remember that a fraction is also a division problem.) To convert a fraction to a decimal:

- Divide the numerator by the denominator.

- If the quotient is a repeating decimal, round the quotient to a desired place value.

Example: Change $\frac{1}{4}$ to a decimal.

$$\begin{array}{r} .25 \\ 4\overline{)1.00} \\ -\ 8 \\ \hline 20 \\ -\ 20 \\ \hline 0 \end{array} \qquad \frac{1}{4} = 0.25$$

Example: Change $\frac{4}{9}$ to a decimal. Round to the hundredths place.

Step 1: Divide.

$$\begin{array}{r} 444 \\ 9\overline{)4.000} \\ 3\,6 \\ \hline 40 \\ 36 \\ \hline 40 \\ 36 \\ \hline 4 \end{array}$$

Step 2: Round the quotient.

$0.444 \approx 0.44$

$\frac{4}{9} \approx 0.44$

696

(Note that the quotient is a repeating decimal. If you kept on dividing, you would just keep adding 4s to the quotient.)

English to Metric Conversion Table

Decimals to Millimeters

Decimal	mm	Decimal	mm
0.001	0.0254	0.500	12.7000
0.002	0.0508	0.510	12.9540
0.003	0.0762	0.520	13.2080
0.004	0.1016	0.530	13.4620
0.005	0.1270	0.540	13.7160
0.006	0.1524	0.550	13.9700
0.007	0.1778	0.560	14.2240
0.008	0.2032	0.570	14.4780
0.009	0.2286	0.580	14.7320
0.010	0.2540	0.590	14.9860
0.020	0.5080	0.600	15.2400
0.030	0.7620	0.610	15.4940
0.040	1.0160	0.620	15.7480
0.050	1.2700	0.630	16.0020
0.060	1.5240	0.640	16.2560
0.070	1.7780	0.650	16.5100
0.080	2.0320	0.660	16.7640
0.090	2.2860	0.670	17.0180
0.100	2.5400	0.680	17.2720
0.110	2.7940	0.690	17.5260
0.120	3.0480	0.700	17.7800
0.130	3.3020	0.710	18.0340
0.140	3.5560	0.720	18.2880
0.150	3.8100	0.730	18.5420
0.160	4.0640	0.740	18.7960
0.170	4.3180	0.750	19.0500
0.180	4.5720	0.760	19.3040
0.190	4.8260	0.770	19 5580
0.200	5.0800	0.780	19.8120
0.210	5.3340	0.790	20.0660
0.220	5.5880	0.800	20.3200
0.230	5.8420	0.810	20.5740
0.240	6.0960	0.820	20.8280
0.250	6.3500	0.830	21.0820
0.260	6.6040	0.840	21.3360
0.270	6.8580	0.850	21.5900
0.280	7.1120	0.860	21.8440
0.290	7.3660	0.870	22.0980
0.300	7.6200	0.880	22.3520
0.310	7.8740	0.890	22.6060
0.320	8.1280	0.900	22.8600
0.330	8.3820	0.910	23.1140
0.340	8.6360	0.920	23.3680
0.350	8.8900	0.930	23.6220
0.360	9.1440	0.940	23.8760
0.370	9.3980	0.950	24.1300
0.380	9.6520	0.960	24.3840
0.390	9.9060	0.970	24.6380
0.400	10.1600	0.980	24.8920
0.410	10.4140	0.990	25.1460
0.420	10.6680	1.000	25.4000
0.430	10.9220		
0.440	11.1760		
0.450	11.4300		
0.460	11.6840		
0.470	11.9380		
0.480	12.1920		
0.490	12.4460		

Fractions to Decimals to Millimeters

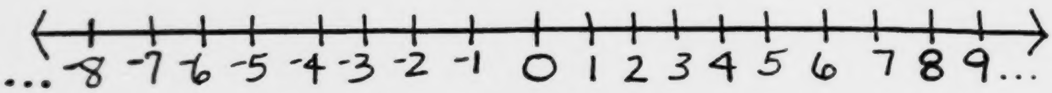
Fraction	Decimal	mm	Fraction	Decimal	mm
1/64	0.0156	0.3969	33/64	0.5156	13.0969
1/32	0.0312	0.7938	17/32	0.5312	13.4938
3/64	0.0469	1.1906	35/64	0.5469	13.8906
1/16	0.0625	1.5875	9/16	0.5625	14.2875
5/64	0.0781	1.9844	37/64	0.5781	14.6844
3/32	0.0938	2.3812	19/32	0.5938	15.0812
7/64	0.1094	2.7781	39/64	0.6094	15.4781
1/8	0.1250	3.1750	5/8	0.6250	15.8750
9/64	0.1406	3.5719	41/64	0.6406	16.2719
5/32	0.1562	3.9688	21/32	0.6562	16.6688
11/64	0.1719	4.3656	43/64	0.6719	17.0656
3/16	0.1875	4.7625	11/16	0.6875	17.4625
13/64	0.2031	5.1594	45/64	0.7031	17.8594
7/32	0.2188	5.5562	23/32	0.7188	18.2562
15/64	0.2344	5.9531	47/64	0.7344	18.6531
1/4	0.2500	6.3500	3/4	0.7500	19.0500
17/64	0.2656	6.7469	49/64	0.7656	19.4469
9/32	0.2812	7.1438	25/32	0.7812	19.8438
19/64	0.2969	7.5406	51/64	0.7969	20.2406
5/16	0.3125	7.9375	13/16	0.8125	20.6375
21/64	0.3281	8.3344	53/64	0.8281	21.0344
11/32	0.3438	8.7312	27/32	0.8438	21.4312
23/64	0.3594	9.1281	55/64	0.8594	21.8281
3/8	0.3750	9.5250	7/8	0.8750	22.2250
25/64	0.3906	9.9219	57/64	0.8906	22.6219
13/32	0.4062	10.3188	29/32	0.9062	23.0188
27/64	0.4219	10.7156	59/64	0.9219	23.4156
7/16	0.4375	11.1125	15/16	0.9375	23.8125
29/64	0.4531	11.5094	61/64	0.9531	24.2094
15/32	0.4688	11.9062	31/32	0.9688	24.6062
31/64	0.4844	12.3031	63/64	0.9844	25.0031
1/2	0 5000	12.7000	1	1.0000	25.4000

VALMONT
SIGNED NUMBERS

1. Definition
2. Addition
3. Subtraction

INTEGERS OR SIGNED NUMBERS

Signed numbers have a specific value related to zero. Positive numbers are located to the right of zero and indicate values greater than zero. Negative numbers are located to the left of zero and decrease in value as they move further left of zero.



Standard Numberline

Addition of signed number, with like signs, is done by combining their values and attaching the proper sign. Adding two numbers with opposite is done by finding the difference and giving the sum the sign of the larger number.

Subtraction of numbers is done by changing the sign of the number you are subtracting and change the operation to addition.

EXAMPLES OF ADDITION:

+4 +(+3) = 7 4 + (-3) = 1 -4 + (-3) = -7

-4 + (-3) = -7 -4 + (+3) = -1

EXAMPLES OF SUBTRACTION:

+(4) - (+3) = (+4) - (-3) =

(+4) + (-3) = 1 (+4) + (+3) = +7

(-4) - (-3) = (-4) - (+3) =

(-4) + (+3) = -1 (-4) + (-3) = -7

WORK THE FOLLOWING PROBLEMS:

ADD:

1. -5 + +7	2. +5 + -7	3. +5 + +7	4. -5 + -7

SUBTRACT:

5. +9 - +7	6. -9 - +7	7. -9 - -7	10. +9 - -7

ADDITIONAL PROBLEMS:

1. -15 + -7	2. +9 - -7	3. +21 + +7	4. +12 - -8
5. -15 - -17	6. +5 - +8	7. -10 + +22	8. -9 + +7
9. +17 + -15	10. -7 + -5	11. +7 + -5	12. -19 - -11

13. +32 + -23	14. -15 + +17	15. -18 - -25	16. +8 + +9
17. -8 - -9	18. +8 - +9	19. -8 + -9	20. -15 - +5
21. -18 + +19	22. +18 - +19	23. -18 + -19	24. +18 - +19

Name: ______________________

Date: ______________________

UNDERSTANDING RELATIONSHIPS

1. Reading Decimals
2. Fractions, Decimals, Percents
3. Using Percents to solve problems

Changing Decimals to Fractions

To change a decimal to a fraction (or a mixed decimal to a mixed number), write the figures in the decimal fraction as the top number and write the bottom number according to the number of places used. If you can, reduce the fraction.

EXAMPLE 1. Change .24 to a common fraction.

Step 1. Write 24 as the top number. $\frac{24}{\quad}$

Step 2. Two places means hundredths. Write 100 as the bottom number. $\frac{24}{100}$

Step 3. Reduce the fraction. 24 and 100 can be divided evenly by 4. $\frac{24 \div 4}{100 \div 4} = \frac{6}{25}$

EXAMPLE 2. Change 9.015 to a mixed number.

Step 1. Write 9 as the whole number and 15 as the top number of the fraction. $9\frac{15}{\quad}$

Step 2. Three places means thousandths. Write 1,000 as the bottom number. $9\frac{15}{1{,}000}$

Step 3. Reduce the fraction. 15 and 1,000 can be divided by 5. $9\frac{15 \div 5}{1{,}000 \div 5} = 9\frac{3}{200}$

Write each of the following as a common fraction or a mixed number and reduce.

1. .08 = .375 = .0048 =

2. 3.6 = 9.86 = 10.002 =

3. .085 = 5.08 = .0025 =

4. .00324 = 19.0786 = 123.462 =

5. 16.00004 = 7.22 = 3.000008 =

6. 2036.8 = 48.02 = 3.075 =

Changing Fractions to Decimals

To change a fraction to a decimal, divide the bottom number into the top number. To do this, add a decimal point and zeros to the top number. Usually, two zeros are enough. Bring the point up into the answer.

EXAMPLE 1. Change $\frac{1}{2}$ to a decimal.

Step 1. Divide the bottom number (2) into the top number (1).

Step 2. Add a decimal point and zeros. Divide and bring the point up.

$$\begin{array}{r} .5 \\ 2\overline{)1.0} \\ \underline{1\,0} \\ 0 \end{array}$$

NOTE: Here, one zero was enough to complete the division problem.

EXAMPLE 2. Change $\frac{3}{20}$ to a decimal.

Step 1. Divide the bottom number into the top.

Step 2. Add a decimal point and zeros. Divide and bring the point up.

$$\begin{array}{r} .15 \\ 20\overline{)3.00} \\ \underline{2\,0} \\ 1\,00 \\ \underline{1\,00} \\ 0 \end{array}$$

EXAMPLE 3. Change $\frac{2}{3}$ to a decimal.

Step 1. Divide the bottom number into the top.

Step 2. Add a decimal point and zeros. Divide and bring the point up.

$$\begin{array}{r} .66\frac{2}{3} \\ 3\overline{)2.00} \\ \underline{1\,8} \\ 20 \\ \underline{18} \\ 2 \end{array}$$

NOTE: Here, the division will not come out evenly no matter how many zeros you add. After two places, you write the remainder as a fraction over the number you divided by.

Change each of the following to decimals.

1. $\frac{1}{4} =$ $\frac{2}{5} =$ $\frac{5}{8} =$ $\frac{1}{3} =$

2. $\frac{2}{9} =$ $\frac{6}{25} =$ $\frac{1}{6} =$ $\frac{3}{8} =$

3. $\frac{5}{6} =$ $\frac{3}{10} =$ $\frac{4}{7} =$ $\frac{5}{12} =$

What Are Percents?

Percent is a very common term in the everyday world. Commission, interest, mark-up, and tax rates are all written with percents. Discounts, raises, paycheck deductions, and credit card charges are all figured with percents.

Percent is another way to describe a part or fraction of something, but it is an even more special type of fraction. The *only* denominator (bottom number) it can have is 100. This denominator is not written; it is shown by a percent sign (%). For example, 49 parts out of 100 can be written as $\frac{49}{100}$ which is read as forty-nine hundredths, or as .49 which is also read as forty-nine hundredths, or as 49% which is read as forty-nine percent.

Changing Decimals to Percents

To change a decimal to a percent, move the decimal point two places to the right and write the percent sign (%). If the point moves to the end of the number, it is not necessary to write the point.

EXAMPLES:

Decimal		Move two places to the right		Percent
.35	=	.35	=	35%
.8	=	.80	=	80%
.04	=	.04	=	4%
$.12\frac{1}{2}$	=	$.12\frac{1}{2}$	=	$12\frac{1}{2}$%
.0008	=	.0008	=	.08%

Change each decimal to a percent.

1. .32 = .09 = .6 = .136 =

2. .005 = $.37\frac{1}{2}$ = $.08\frac{1}{3}$ = .045 =

3. .0016 = .0003 = .025 = $.33\frac{1}{3}$ =

4. .125 = .0375 = 009 = 8 =

Changing Percents to Decimals

To change a percent to a decimal, drop the percent sign and move the point two places to the left. Watch where zeros are necessary to move two places in the examples below.

EXAMPLES:

Percent		Move two places to the left		Decimal
6%	=	$\underset{\smile}{06}$	=	.06
30%	=	$\underset{\smile}{30}$	=	.3
150%	=	$1\underset{\smile}{50}$	=	1.5
.9%	=	$\underset{\smile}{009}$	=	.009
$37\frac{1}{2}$%	=	$\underset{\smile}{37\frac{1}{2}}$	=	$.37\frac{1}{2}$

Change each percent to a decimal.

1. 20% = 35% = 8% = 60% =

2. 3.5% = .4% = .03% = 21.6% =

3. $62\frac{1}{2}$% = $6\frac{2}{3}$% = 2.8% = 19% =

See how quickly you can fill in the following table. These are common decimals and percents, and you will save time later on if you know them automatically.

Percent	Decimal	Percent	Decimal	Percent	Decimal
50%		5%		37.5%	
25%		1%		62.5%	
75%		100%		87.5%	
20%		10%		12.5%	

Changing Fractions to Percents

There are two ways to change a fraction to a percent as shown below.

EXAMPLE: Change $\frac{3}{4}$ to a percent.

Method 1. Multiply the fraction by 100%.

$$\frac{3}{\underset{1}{\cancel{4}}} \times \frac{\overset{25}{\cancel{100}}\%}{1} = \frac{75\%}{1} = 75\%$$

Method 2. Divide the bottom number of the fraction into the top number and move the point two places to the right.

$$\frac{3}{4} = 4\overset{.75}{\overline{)3.00}} = 75\%$$

Change each fraction to a percent.

1. $\frac{2}{5} =$ $\qquad \frac{1}{4} =$ $\qquad \frac{1}{3} =$ $\qquad \frac{3}{8} =$

2. $\frac{6}{25} =$ $\qquad \frac{2}{3} =$ $\qquad \frac{5}{6} =$ $\qquad \frac{1}{8} =$

3. $\frac{9}{10} =$ $\qquad \frac{7}{8} =$ $\qquad \frac{11}{20} =$ $\qquad \frac{5}{12} =$

4. $\frac{1}{6} =$ $\qquad \frac{4}{5} =$ $\qquad \frac{7}{10} =$ $\qquad \frac{1}{12} =$

5. $\frac{5}{8} =$ $\qquad \frac{4}{9} =$ $\qquad \frac{3}{7} =$ $\qquad \frac{9}{20} =$

6. $\frac{4}{25} =$ $\qquad \frac{3}{10} =$ $\qquad \frac{3}{5} =$ $\qquad \frac{9}{50} =$

Changing Percents to Fractions

To change a percent to a fraction, write the percent as a fraction with 100 as the bottom number and reduce.

EXAMPLE 1. Change 85% to a fraction.

Step 1. Write the percent as a fraction with 100 as the bottom number. $\frac{85}{100}$

Step 2. Reduce. $\frac{85 \div 5}{100 \div 5} = \frac{17}{20}$

EXAMPLE 2. Change $8\frac{1}{3}\%$ to a fraction.

Step 1. Write the percent as a fraction with 100 as the bottom number. $\frac{8\frac{1}{3}}{100}$

Step 2. You can rewrite this fraction as a division problem. $8\frac{1}{3} \div 100$

Step 3. Change the mixed number to an improper fraction. $\frac{25}{3} \div \frac{100}{1}$

Step 4. Invert the divisor and multiply, canceling where possible. $\frac{\overset{1}{\cancel{25}}}{3} \times \frac{1}{\underset{4}{\cancel{100}}} = \frac{1}{12}$

Change each percent to a common fraction.

1. $35\% =$ $20\% =$ $12\frac{1}{2}\% =$ $6\% =$

2. $16\frac{2}{3}\% =$ $1\% =$ $90\% =$ $37\frac{1}{2}\% =$

3. $12\% =$ $99\% =$ $66\frac{2}{3}\% =$ $4\frac{1}{2}\% =$

4. $80\% =$ $33\frac{1}{3}\% =$ $4\% =$ $8\frac{1}{3}\% =$

Common Percents and Their Values as Proper Fractions

After you have filled in the table on this page, check your answers. Then memorize the table. These are the most common fractions and percents. You will save time later on if you know what each of them is equal to.

Fraction	Percent		Fraction	Percent
$\frac{1}{2}$ =	50%		$\frac{1}{8}$ =	
$\frac{1}{4}$ =			$\frac{3}{8}$ =	
$\frac{3}{4}$ =			$\frac{5}{8}$ =	
			$\frac{7}{8}$ =	
$\frac{1}{5}$ =			$\frac{1}{10}$ =	
$\frac{2}{5}$ =			$\frac{3}{10}$ =	
$\frac{3}{5}$ =			$\frac{7}{10}$ =	
$\frac{4}{5}$ =			$\frac{9}{10}$ =	
$\frac{1}{3}$ =			$\frac{1}{6}$ =	
$\frac{2}{3}$ =			$\frac{5}{6}$ =	

Do your work here.

Finding a Percent of a Number

To find a percent of a number, change the percent to a decimal or to a fraction and multiply.

EXAMPLE: Find 25% of 80.

Method 1.

Step 1. Change the percent to a decimal. $25\% = .25$

Step 2. Multiply.

$$\begin{array}{r} 80 \\ \times\ .25 \\ \hline 4\,00 \\ 16\,0 \\ \hline 20.00 \end{array}$$

Method 2.

Step 1. Change the percent to a fraction. $25\% = \frac{1}{4}$

Step 2. Multiply.

$$\frac{1}{\underset{1}{\cancel{4}}} \times \frac{\overset{20}{\cancel{80}}}{1} = \frac{20}{1} = 20$$

Use the method that you find easier to work the following.

1. 5% of 120 = 7% of 965 = 10% of 780 =

2. 20% of 36 = 15% of 50 = 40% of 60 =

3. 75% of 680 = 80% of 500 = 50% of 418 =

4. 35% of 480 = 65% of 620 = 85% of 940 =

5. 2.6% of 390 = .8% of 56 = 1.8% of 753 =

If you want to multiply by a complex percent like $16\frac{2}{3}\%$, it is easiest to change the percent to the fraction that it is equal to (from the table on page 80) and then multiply.

EXAMPLE 1. Find $16\frac{2}{3}\%$ of 42.

Step 1. Change the complex percent to a fraction. $16\frac{2}{3}\% = \frac{1}{6}$

Step 2. Multiply.

$$\frac{1}{\underset{1}{\cancel{6}}} \times \frac{\overset{7}{\cancel{42}}}{1} = \frac{7}{1} = 7$$

If you do not know the fractional value of a complex percent, multiply by the improper fraction form of the percent, and put the other number over 100.

EXAMPLE 2. Find $6\frac{2}{3}\%$ of 45.

Step 2. Change the numbers of the percent to an improper fraction. $6\frac{2}{3} = \frac{20}{3}$

Step 2. Put the other number over 100 and multiply.

$$\frac{\overset{1}{\cancel{20}}}{\underset{1}{\cancel{3}}} \times \frac{\overset{15}{\cancel{45}}}{\underset{5}{\cancel{100}}} = \frac{15}{5} = 3$$

Find the following.

1. $33\frac{1}{3}\%$ of 75 = $12\frac{1}{2}\%$ of 96 = $16\frac{2}{3}\%$ of 84 =

2. $37\frac{1}{2}\%$ of 720 = $83\frac{1}{3}\%$ of 630 = $1\frac{1}{2}\%$ of 200 =

3. $5\frac{1}{4}\%$ of 400 = $66\frac{2}{3}\%$ of 90 = $87\frac{1}{2}\%$ of 200 =

4. $8\frac{1}{3}\%$ of 36 = $6\frac{1}{4}\%$ of 60 = $62\frac{1}{2}\%$ of 176 =

Percent Exercise 4: Complete each column. Reduce fraction when necessary. round decimals to nearest hundredth when necessary.

Percent	Fraction	Decimal
1. ____	$\frac{31}{100}$	.31
2. 40%	____	.4
3. 92%	$\frac{23}{25}$	____
4. ____	$\frac{7}{10}$	.7
5. 50%	____	.5
6. ____	$\frac{1}{8}$	.125
7. 2%	$\frac{1}{50}$	
8. 35%	____	.35
9. ____	$\frac{43}{100}$	.43
10. 7.5%	$\frac{3}{40}$	____
11. 7%		.07
12. 30%	$\frac{3}{10}$	____
13. ____	$\frac{1}{5}$	.2
14. 75%	____	.75

Percent Exercise 4: Complete each column. Reduce fraction when necessary. round decimals to nearest hundredth when necessary.

Percent	Fraction	Decimal
1. ____	$\frac{31}{100}$	.31
2. 40%	____	.4
3. 92%	$\frac{23}{25}$	____
4. ____	$\frac{7}{10}$	.7
5. 50%	____	.5
6. ____	$\frac{1}{8}$	.125
7. 2%	$\frac{1}{50}$	
8. 35%	____	.35
9. ____	$\frac{43}{100}$	.43
10. 7.5%	$\frac{3}{40}$	____
11. 7%		.07
12. 30%	$\frac{3}{10}$	____
13. ____	$\frac{1}{5}$	.2
14. 75%	____	.75

Valmont 2000 Using Percents

1. Of the 58 million irrigated acres in the United States, barely 24% are presently under mechanized irrigation. What percentage are not irrigated by mechanized irrigation?

2. Valmont's net sales declined in 1991 to $429.7 million from $446.5 million in 1990. What is the difference between the two years? What is the percent of decrease in net sales in 1991?

3. As a percent of sales, 1991's gross profit percentage was 20.8% compared to 1990's gross profit of 23.7%. What is the difference in percentage points between the two years?

4. A net loss of $8.0 million resulted in 1991 compared to the net earnings of 15.5 million in 1990. What is the amount of difference between the 2 years?

5. The company's order backlog amounting to $91.6 million December 26, 1992, was approximately 11% higher than one year ago. What would be the amount (in dollars) in December, 1991?

Attachment

F

MENTORING PROGRAM UPDATE

Summary of Major Accomplishments and Lessons Learned Concerning the Mentor Training and the Mentor Program

Several circumstances contributed to the timing of the mentor training. In order to have mentors how had some experience with Valmont 2000 classes, it was not possible to recruit prospective mentors until after at least one session of classes had been completed. Initially, no funds had been allocated for the development and administration of a mentor training program. Money budgeted for curriculum development was reallocated to mentor training after the qualified staff of Valmont 2000 instructors developed their own class program and materials, thus saving the funds that would have been needed to buy a pre-published curriculum.

The size of the mentor training program needed to fit the needs of Valmont Industries. It was decided that a small scale pilot program would be the best way to gain initial support for the mentor program. The decision to increase the number of mentors in the future would depend in part on the success of the pilot program. The needs of the company dictated the number of hours of training time also.

The mentor handbook (see Attachment A) was developed specially for the Valmont 2000 program. It addresses what appeared to have been the major concerns of the plant personnel during the initial sessions of the Valmont 2000 training sessions – why Valmont Industries is involved in this type of training, and what is involved in the different phases of the Valmont 2000 program. The information included in the handbook was collected through extensive interviews and research. The handbook has been well received by the mentors, and the members of management who have read it. It is easily revisable and some revisions have already been made at the suggestion of the mentor trainees (See Attachment C). The mentor training was based on the information in the handbook.

It is interesting that the mentors' evaluation of the training and the handbook seems to be higher several months after their training than it was immediately following the training. See the Mentor Training Evaluation pages (Attachment E) for the ratings the mentors gave immediately following their training. Note that there are three questions for each aspect of the training--the handbook, the training sessions, and the trainer. The third questions for each aspect asks the mentors to rate how well prepared they think they are to answer the questions employees may ask. In each section there is a slight dip in the ratings when it comes to that third question. The last question asked the mentors to give an overall rating of how well prepared they feel. It is apparent that they had uncertainties about what kind of questions they might be asked and, therefore, how well prepared they were to answer them. At the follow-up meeting (Attachment F) each of the mentors indicated that he would not make any changes to the handbook or the training, and that he felt that he had been well prepared for the questions that have been asked.

Based on the feedback that has been received it appears that the handbook could serve as a model for future training program.

At the follow-up meetings, the mentors also stated that more publicity about the mentor program would probably be helpful. They indicated that even though they felt well prepared and effective in the contacts that had been made, the number of contacts was much lower than they had expected. They also felt that there would probably be more demand for mentors in the future if there were any changes to the Valmont 2000 program, when employees would once again want to know what is going on and why. They felt comfortable with the fact that, if that happened, the mentor training would be revised appropriately.

ATTACHMENT A

A

Mentor Memos

A Handbook for the Mentors of the Valmont 2000 Program

By JoAnne Kollross Woleben

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This handbook is dedicated to all of the Valmont plant personnel whose skills and talents are a vital part of the past, present, and future successes of Valmont Industries.

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Valmont 2000 Mentors

Name	Ext.	Dept.	Trained
Egr, Daniel	3533 3589	1100	4-12-94
Fester, Leon	3707	2891	4-12-94
McCabe, Roy	3597 3535	1260	4-12-94
Messerschmidt, Jim	3847 3848	2064	4-12-94
Potter, George	3504	1170	4-12-94
Schwarz, Mike	3786	2151	4-12-94

Why?

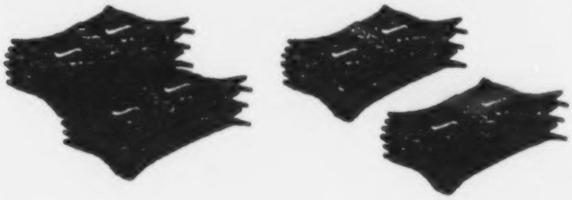
Why has Valmont Industries instituted a basic skills training program?

There is no short, easy answer to this. The truthful answer is long and has many parts. One cannot understand the complete answer unless all of the parts are considered.

Every company, no matter what the industry, is in business to make money. Everything a company does should in some way work toward the goal of making money. This is good for **everyone** involved with the company. The upper management personnel are well compensated, the stockholders are pleased with their dividends and the value of their stock, and all the employees of the company continue to receive good wages and benefits. **Everyone** feels some security in being involved with a solid company that is making money.

If, on the other hand, a company is not making money, everyone loses that feeling of security.

It is important, therefore, for everyone involved with the company to work toward the common goal. When the company makes money, it is of benefit to **everyone**.



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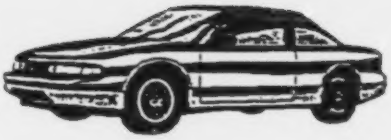
Companies are continuing to see changes in their industries. Many companies have continued with business as usual at a time when their competitors were responding to changes in the market place. Those companies who did not recognize or were not able to respond quickly to the need for change have found themselves in a position of losing customers and losing money.



Whole national industries have found themselves in this position. The Swiss lost their place as first in the watch industry when they did not recognize the importance of the quartz watch. And the American automobile industry has been fighting an uphill battle for years trying to regain a position of respect. At first they did not recognize the customer desire for smaller, more fuel-efficient cars; then they did not recognize the need to meet their competitors' standard of quality.

Individual companies have gone through vast changes due to their ability or inability to recognize the need to change for the marketplace. For companies like Motorola, that **recognized** the need, the purposeful changes they made to keep up with the market have made the company stronger than ever. For companies like IBM, that **did not recognize** the need , the changes that inevitably took place in the company were changes that occurred as a result of losing customers and losing money; a situation that caused hardship for many of the people involved with the company.

Along with needing to recognize the need for change, companies must also keep an eye on the competition. Lee Iacocca, Chief Executive Officer of the Chrysler Corporation, described the situation in business today very well when he said, "In today's competitive...industry, a company must lead, follow, or get out of the way!"

Valmont Industries is now in the lead in two product areas. We are the largest provider of street lighting and traffic signal poles in the world. And we are the world leader in overhead automated irrigation equipment. We do have competitors, though; and those competitors, like Lindsay Manufacturing Co., are not standing still. They are doing their best to expand their markets. Valmont has no desire to "get out of the way." We also are expanding our global markets. We intend to maintain our lead and continue to be a strong company on into the future. In order to do that we are involved in a number of programs to help us maintain our position as leader in these industries.

Mogens Bay, the President and Chief Executive Officer of Valmont Industries, said, "Our company was founded in 1946 and over the years it has grown to a half a billion dollar manufacturing company. We have earned a leadership position in two industries... We didn't earn these leadership positions because we had access to more sophisticated production equipment or better computer systems than anyone else. We earned those leadership positions because of the people at Valmont. We have people who know how to out perform our competition. We believe very, very strongly that our most valuable resource is our human resource."

Because companies realize that they must be able to keep up with the marketplace, and because they realize that they must stay ahead of the competition, and because more companies are beginning to realize that the people they employ are their most important asset in achieving their goals, companies are investing more time and money in training now than they ever have before. They know they must keep their people up to date on all the skills required to make sure the company can keep up with the marketplace and ahead of the competition.

According to the American Society for Training and Development (ASTD), American corporations are spending about $30 billion a year to train their employees. Employers find that having a highly skilled, well-trained work force saves them money in the long run, so they see the benefits in providing the training.

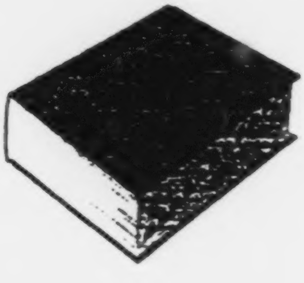
Along with providing the training for the skills needed for new programs and new equipment, companies are finding that they need to provide training in the basic skills of reading, writing, and math. In the past several years, business publications have printed hundreds of articles concerning the need for training in this vital area. The concerns addressed in these articles are many. Changes in the workplace, increased competition, and new technologies have made some old production methods obsolete. The workforce must be flexible and adaptable. Strong reading skills are essential for adaptability. This concern is seen as particularly urgent as US companies are competing increasingly in the global market.

Several business organizations (including the Institute for Corporate Education and the Business Council for Effective Literacy) agree that 27 million American adults are extremely low in basic reading skills. The US Department of Education presents a similar figure and adds that another 47 million American adults have marginal reading skills. Some organizations feel that mathematic skills and communication skills (including writing and speaking clearly and listening) are of even greater concern.

Many companies across the country are now providing basic skills training for their employees. Motorola appears again and again in business publications as a company that is experiencing a great deal of success because of a variety of different efforts and strategies. Motorola is recognized as a pioneer in innovative training. During the year of 1988, Motorola spent $1 million on basic skills training for their employees. By 1993, that one company had spent $35 million training their employees in the basic skills of reading, writing, and math.

A few other companies that have provided or are providing basic skills training to their employees are Control Data, Ford Motor Co., Honeywell, US West, Polaroid Corp., Domino's Pizza Distribution Corp., and General Motors Corp. Many of the companies that offer this training work in partnership with another institution to establish the program. In 1989, *Training* magazine reported that about 10% of the smallest and 30% of the largest companies provided some training in basic skills. Within the past 5 years, more and more companies have joined the list. Locally, Airlite Plastics and Epsen Hillmer Graphics are working with Metropolitan Community College to establish basic skills training programs in their organizations.

More companies are offering this training because they have found that, over the years, jobs are requiring higher and higher levels of reading, writing, and math skills. Jobs requiring very low levels of these skills are gradually disappearing as the requirements of those jobs change. These companies have found that upgrading employee skills is cost-effective, and studies have shown repeatedly that it is an effective way to increase productivity over time. Benefits also appear in the areas of safety, quality, and personal development.



Valmont is committed to maintaining its leadership position in a business climate that demands the ability to recognize and make changes as they are needed. We realize that the people that make up the community of Valmont are the key to meeting the demands of that business climate. We know it is vital to train our people as needed to keep our work force skills up to date. In keeping with this philosophy, we have joined the long list of other successful companies that are addressing the need to train and update employees in the basic communication and computation skills of reading, writing, and math. We are pleased to be working with Metropolitan Community College as a partner in this endeavor.

> As Mogens Bay said, "We believe very, very strongly that our most valuable resource is our human resource. We also believe in continuous improvement: life should be a continuing learning experience. We must, at all times, upgrade our skill levels, beginning from the very basic writing, reading, and math skills. We are committed to this at Valmont because it is absolutely imperative for us to stay ahead in the markets we serve. That we continue to develop our human resource is what Valmont 2000 is all about."

Why Me?

Why should I take part in the Valmont 2000 training?

Again there is no short, easy answer for this. One must consider the combination of many reasons.

You and your work are vital to the success of Valmont Industries. Everyone within the organization of Valmont performs duties that in some way help the company in its effort to achieve the goal of making money. ***Everyone* depends on everyone else to perform their duties, because *everyone* wants the company to continue to make money.**

Everyone depends on top management. They make the decisions about which markets the company will pursue and which products and services the company will offer. They set the tone and establish the company philosophy. Wise management decisions play a vital role in the company's effort to achieve the goal.

Everyone depends on sales personnel. They seek out customers. They make sure that the products and services offered by the company are sold at a price that will insure that the company will continue to make money.

Everyone depends on the support services in the company. They make sure that all the employees of the company receive their pay checks and proper benefits, that our customers pay their bills to us, and that we pay our bills to our suppliers. There are dozens of support services that make sure that the workings of the company run smoothly and efficiently. If they did not, company time and money would be wasted and this would take away from the efforts to achieve the goal.

And everyone depends on the plant personnel. They build the product that is offered for sale. They build in the quality that makes a customer want to buy from us again. They produce the product on which the reputation of Valmont Industries is built. Producing a quality product is vital to our efforts of achieving the goal of making money.

You are a vital part of the Valmont organization, and Valmont has come to realize, like so many other organizations, that a workforce with a good command of communication and computation skills is imperative for a company to compete successfully in the business world of today and tomorrow. Skills that were adequate at the time when much of today's workforce was hired, will not meet the demands of the future. The skills that were required during the '70's and '80's will not be good enough for the 21st century; and the 21st century is coming upon us very quickly. This is, in part, why you should support the efforts of Valmont 2000 and take part in it. You will be doing what you can to make sure that you are ready for the changes that will continue to occur in your particular area. In this way you will be helping Valmont maintain its competitive position. You will be doing your part to make sure that you continue to work for a strong company, a company that can continue to make money for the benefit of all of the people of Valmont Industries.

You know that companies are constantly looking for ways to make more money. They try different business strategies and adopt different programs. Many of these strategies and programs prove to be very effective in either saving money or increasing income for the company. Programs like JIT should have the support of all employees because they help the company remain strong. Programs like this are of direct benefit to the company. They save the company money and increase efficiency. By helping the company remain strong and competitive, these programs indirectly benefit the employees.

There are two areas that provide direct benefits to the company, and **direct benefits** to the employees as well. These two areas are safety and training. In the area of safety, the company benefits by having fewer lost work days and reduced health care costs. The employees benefit by being made more aware of hazards so that injury can be avoided.

In the area of training the company benefits by having a skilled workforce that can perform the necessary tasks well and can adapt to any changes that will take place. The employees benefit by acquiring or strengthening skills; that is, they gain new knowledge that they will carry around in their heads forever. Once the employees have learned whatever it is that the training addresses, no one will ever be able to take that knowledge away from them. John Ruskin, an influential social critic during the 1800's said, "The highest reward for a person's toil is not what they get for it, but what they become by it." No where is that more true than in the area of training. A member of the board of the American Society for Training and Development suggests to employees, "Get all the training you can."

Some types of training are extremely job specific. The knowledge gained helps the employee to produce high quality products consistently. Other types of training are extremely important for the job, but can also be applied outside of the workplace. Team training and leadership training are good examples. The knowledge gained in these sessions can be used in employees' community, and even family, activities. Training in basic communication and computation skills provides the employees with knowledge that is necessary for the job, and that can be applied to every other aspect of the employees' lives.

The business publications mentioned in the previous section (Why?) detailed some benefits of basic skills training that affect the employee directly. They pointed out that employees taking part in this training understand their benefits packages better than they had before. They are also more likely to be promoted. Other publications cite examples of new experiences and accomplishments outside of the workplace.

Valmont employees who are taking part in the Valmont 2000 training are in good company. In recent years, millions of Americans have gone through this same type of training. Many are employees of some of the largest and most profitable companies in the country. The companies are seeing the benefits and so are the employees.

Valmont 2000 is a part of Metropolitan Community College. All of the Valmont 2000 staff, both full-time and part-time, are employees of Metro and receive their paychecks from Metro. Several members of the staff teach classes at one of the Metro campuses. As a Metro employee, the Director of Valmont 2000 has attended seminars to learn more about workplace programs and new training strategies that are presently being developed. The entire staff is committed to providing you with the best training possible.

The education staff meets for several hours weekly to discuss new strategies, evaluate materials, and make necessary changes to make the training more effective. They are constantly composing new workplace problems and revamping the curriculum in order to make the training as work-related as possible. Smaller groups of teachers meet to incorporate the new ideas into the particular training areas of reading, writing, and math.

All of the student records are kept confidential and maintained as the property of Metropolitan Community College. Valmont Industries personnel have no access to these records and they have demonstrated complete respect for the confidential status of student files.

A task force composed of members of the Valmont 2000 staff and various levels of personnel from Valmont Industries meets regularly to discuss the progress of the training program. This open line of communication is extremely important to insure that Valmont 2000 provides the training that the company needs in a way that is most effective and beneficial to employees.

What?

What are all the steps involved in the Valmont 2000 Program?

The following four sections will give rather detailed descriptions of the four parts of the Valmont 2000 Program.

1. **The Job Analysis**
2. **The T.A.B.E. Session**
3. **The Counseling Session**
4. **Training Sessions**

A Job Analysis is done for a specific job classification to determine exactly what tasks are performed on a job and what skills are needed to perform those tasks, concentrating on the level of skills needed in reading, writing, and math.

Following the Job Analysis, everyone in that particular job classification takes the T.A.B.E. to assess each employee's present skill level in the areas of reading, writing, and math.

Following the T.A.B.E., each person meets individually with a counselor to discuss the results of the T.A.B.E. and any need for training, and to discuss career plans and possible enrichment options that are available at Metropolitan Community College.

Following the individual counseling sessions, those employees that are scheduled for a specific area of training participate in the appropriate training sessions. All employees scheduled for classes are expected to participate. This training is not optional.

Employees who will be retiring in the near future *may* have the option of not participating in this training. It depends on the type of training that is needed and the types of additional duties that may be required to perform the job in the foreseeable future. The situation will be reviewed by the appropriate Human Resources representative and a decision will be made based on the circumstances.

Job Analysis

The first aspect of the Valmont 2000 program is the job analysis. The purpose of this is to determine the tasks that are done on a particular job and the skills needed to perform those tasks. The Valmont 2000 job analysis concentrates on the level of skills needed in reading, writing, and math.

The first step in this process is establishing a job analysis team. This team is composed of a supervisor, a leadman, and two incumbents. Publications about job analyses often refer to incumbents as subject matter experts (SME's). These are the people who do the job on a daily basis; they are the people who actually perform the tasks. A job analyst (who is a member of the Valmont 2000 staff and, like all the other Valmont 2000 staff members, is an employee of Metropolitan Community College) is also part of this team.

Once the job analysis team has been established, the job analyst visits the work site to observe SME's in action. This allows the job analyst to become more familiar with the job and to make some preliminary notes about the tasks that are performed. Some videotaping will be done at this time also.

The job analyst then interviews SME's, two at a time. Several pairs of employees are interviewed. Some of these employees will answer questions on computerized forms; no names are recorded on these forms. All of these SME's will answer questions presented by the job analyst about tasks that are performed on the job and the skills that are needed. As a result of these interviews, the job analyst will compile a list of job tasks, and a list of abilities needed. Other sources of information (like the job description) will also be used to make sure the lists are complete. Using materials actually used on the job, education staff members will ascertain the required levels of the skills of reading and writing.

The job analysis team then provides two different ratings for each task on the list. They rate the importance of the task and how frequently it is performed. They also match the reading, writing, and math skills to the tasks where they are needed. The job analyst calculates the average rating for each task. That information is entered on the final report.

The final report is prepared by the job analyst and approved by the job analysis team and other staff members who have had input into the process.

T.A.B.E. Sessions

Everything involved with this session takes about 5 hours. The time is scheduled as either a 5-hour block in one day or two 2 1/2-hour blocks on two consecutive days. Groups of up to 30 employees may be involved in a session. In the beginning of this session, employees fill out a consent form and a survey before starting the T.A.B.E.

The **Test of Adult Basic Education** (T.A.B.E.) is one of the assessment tools used by Metropolitan Community College to determine the level of skills of an incoming student. Because Valmont 2000 is under the auspices of Metropolitan Community College, we are using the T.A.B.E. as an assessment tool also.

The T.A.B.E. is actually a combination of several tests that cover different areas of reading, math, and language expression. The reading tests cover vocabulary (understanding the meaning of individual words) and reading comprehension (understanding the meaning, both stated and implied, of a short passage). The math tests cover computation (adding, subtracting, multiplying, and dividing) and concepts and applications (such as problem solving and measurement). The language tests cover mechanics (capitalization and punctuation), expression (sentence structure and word usage), and spelling.

The T.A.B.E. is available in 4 different levels of difficulty; the first level is the easiest, and the fourth is the most difficult. The third level of the T.A.B.E. is used in the Valmont 2000 program. It is a level that has been used in other industrial settings. It is very important to know which level of the T.A.B.E. is being used when it is time to interpret the scores.

Many people do not fully understand the meaning of the grade equivalencies that are noted on the test results. Because of this, there is often confusion when test results are interpreted.

The third level of the T.A.B.E. covers material within the grade ranges of 6.6 to 8.9 (6th grade, 6th month to 8th grade, 9th month). This does not mean that every person at the 8.9 level has mastered all of this material. It simply means that the material is generally regarded as subject matter that has been presented sometime during the grade levels of 6.6 to 8.9.

When testing companies create a test, it is administered to large numbers of people before it is offered as an assessment measure. The more conscientious companies administer a given test to thousands of people. This is the way to "norm" a test; it is a way to find out what is the "normal" (average) score for a specific group of people. In order to find *grade equivalencies*, the test is administered to *students* who range in age from several years below the range of the test to several years above (in the case of the third level T.A.B.E., to 12.9). Many standardized tests have been normed on students in these grades, because many tests depend on grade equivalencies.

After the test is administered to the large group, the scores of each segment of the group (for instance, each grade level) are looked at separately. The average score for that segment is determined and the grade equivalent of that group is then attached to that score. The average score for the segment of the group that is in the 10th grade, 5th month, for example, is given the grade equivalent of 10.5. In this way, the scores of each segment of the group are used to establish the norms.

There is really no way to define an "average" high school student in terms of what a student has learned. There is such a wide array of course offerings and such a large range in difficulty levels, it would be impossible to create a test that indicates what an "average" student (at any grade level) knows or is able to know. Therefore, the best that can be done is to create a test and determine what the average *score* is for a certain group of people *on that test.* This is *all* that grade equivalencies can claim to show.

On the T.A.B.E. test, a grade equivalent of 10.5, for example, does *not* indicate that the test taker has mastered skills at a 10th grade, 5th month level. Because the normed score is simply the average score of students at a particular grade level, it means only that the test taker has done as well *on that test* as an "average scoring" student that has reached the 5th month of the 10th grade. The level of the test itself must still be considered.

Another area of the test score report that seems to cause confusion is the section that specifies percentiles. Percentiles are **not** percents. Percentiles refer to the position of the test taker's score in relation to other people who have taken the test.

Percentiles do **not** indicate the percent of the questions that the test taker answered correctly. As a matter of fact, if a test is extremely difficult, it is possible for a test taker to get only half of the answers right and still achieve a score that is in the 99th percentile (which is the highest percentile indicated on assessment measures).

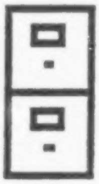
Percentiles indicate *the percent of **people** who have taken the test* who have scored at or below the score of the person being considered. For example, if a test taker's score is at the 90th percentile, it means that 90% *of the people who take the test* score at or below that score. Considered from the other direction, it also means that only 10% of the people who take the test score above that score. If a score falls at the 67th percentile, it means that 67% of the people who take the test achieve that score or below it, and 33% of the people who take the test score above it.

A very important issue here is that a percentile can never be considered in isolation. It is a piece of information that is given on a score report, *along with many other pieces of information,* so that a score may be understood more completely. Looking at only one piece of information does not give an accurate picture of what a score means. All the pieces of information on the score report need to be considered together.

One must also realize that, as complete as a test report is, it is not adequate by itself to assess a person's skill level. Other performance measures must be considered also in order to gain a wider understanding of the person's skills. That is why the Valmont 2000 training sessions utilize a range of strategies to ascertain and enhance the skill levels of the employees.

The T.A.B.E.'s are scored mechanically at Metropolitan Community College. The T.A.B.E. scores are seen only by the test taker and by members of the Valmont 2000 staff who have legitimate reason to see them (e.g. a counselor or the instructor). The scores are kept in a locked cabinet and *everyone* on the Valmont 2000 staff considers the issue of confidentiality of scores to be a very serious matter. If, at some time in the future, the Valmont 2000 office is moved off the premises of Valmont, the files containing the T.A.B.E. scores will be transferred immediately to Metropolitan Community College. No one from Valmont Industries has, or will have, access to these scores. Valmont Industries personnel (including those in management) understand this and have shown complete respect for the confidential status of the scores. *If* a test taker, for whatever reason, *wants* a member of the Valmont Industries staff to have access to the test taker's scores, *the test taker must personally notify the Valmont 2000 office.* Without such a personal notification, *no one* outside of the Valmont 2000 office will have access to the scores.

Each test taker will have a personal copy of his or her own T.A.B.E. scores. That person alone must assume control over who sees that personal copy of the scores.



TABE

Tests of Adult Basic Education
Forms 5 and 6

Norms Book

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Grade Equivalents

Grade equivalents (GEs) are intended to indicate achievement levels related to typical educational structures—elementary and secondary schools. These scores do not have comparable meaning in nongraded programs, particularly programs that focus on the education and training of adults. Nevertheless, grade equivalents are commonly understood reference points for adult learners and teachers and can facilitate organization of instructional groups and selection of appropriate instructional materials.

definition

The scale for grade equivalents ranges from .0 through 12.9, representing the thirteen years of school (K through 12) and the ten months in the traditional school year. September is taken as the beginning of the school year (.0); thus October is represented on the scale as .1, November as .2, and so on until June (.9). For TABE 5 and 6, a grade equivalent represents the grade and month in school of students in the CAT E and F norm group whose test performance is theoretically equivalent to the test performance of a given TABE examinee. Suppose that a Vocabulary test was administered during October to a norming group of sixth grade students and that the median scale score obtained was 475. Then the grade equivalent for a scale score of 475 on that test would be set at 6.1, 6 representing Grade 6 and .1 representing the month of October. Any examinee who obtained a scale score of 475 on that Vocabulary test would be given a grade equivalent of 6.1 in vocabulary skills.

interpretation

For TABE 5 and 6, grade equivalents are based on the CAT E and F standardization administrations in October (.1) and May (.8). Grade equivalents for other times of the school year are interpolated (mathematically estimated) from these points.

Caution should be exercised in interpreting grade equivalents. If an examinee obtains a grade equivalent of 4.8 on a mathematics test, it does not mean that the examinee has mastered all the mathematics that is taught in the first eight months of Grade 4. It means that the examinee's performance on *this* test is theoretically equivalent to the typical performance of students in the CAT E and F norm group who had completed eight months of Grade 4.

variation between tests

On a particular test, such as Vocabulary, GE scores may be considered comparable. However, GE scores are not comparable across tests. For example, a GE of 6.7 in reading does not necessarily represent a higher skill level than a 6.1 in mathematics. Therefore, grade equivalents cannot be used to compare performance on the reading test with performance on the mathematics test. To make that kind of comparison, stanines or percentile ranks should be used.

T A B E

Tests of Adult Basic Education
Forms 5 and 6

Norms Book

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Percentile Ranks

Percentile ranks, which range from 1 to 99, are commonly used for reporting test results. A percentile rank indicates the percentage of scale scores in a norm group that fall *below* a given examinee's scale score. For example, if an examinee's scale score converts to a percentile rank of 71, this means that the examinee scored higher than approximately 71 per cent of the examinees in the norm group. With TABE 5 and 6, the norm group may be one of four different reference groups: adult basic education enrollees, adult offenders in adult correctional facilities, juvenile offenders in juvenile correctional facilities, and vocational/technical school enrollees.

caution

The meaning of percentile ranks should be carefully explained to examinees, some of whom may assume that a percentile rank represents the percentage of test items answered correctly. Also note that a scale of percentile ranks is not composed of equal measuring units.

A given difference between percentile ranks is larger in terms of scale score units near either end of the distribution than it is near the middle. For example, the scale score difference between percentile ranks of 5 and 10 or between 90 and 95 is much greater than the scale score difference between percentile ranks of 50 and 55. It is this characteristic that makes percentile ranks unsuitable for computing means.

Counseling Sessions

When the T.A.B.E. results are received in the Valmont 2000 office, the counselors meet with Dr. Ken Jones, who directs the activities of the Valmont 2000 education staff. They look at the scores for each employee and compare the scores for each individual section of the T.A.B.E. with the requirements for the job. In this way they make the preliminary determination of who needs to be scheduled into the Valmont 2000 training program.

Within a week to 10 days after taking the T.A.B.E., employees attend an individual session with one of the career counselors. The counselors, like all the other members of the Valmont 2000 staff, are employees of Metropolitan Community College. The session takes about 35 minutes. Each employee and a counselor meet privately in the Valmont 2000 conference room.

During this session the employee receives a personal copy of his or her own T.A.B.E. scores. The counselor discusses the scores with the employee and helps to interpret all of the information on the score report. They also compare the employee's level of proficiency in particular skill areas with the skill level that is required by the job.

Together the counselor and employee fill out the Individual Education/Career Plan (IEP). This details future training and career development plans and options for the individual employee. At this time, the counselor provides information about enrichment programs and courses available at Metropolitan Community College if the employee requests it. The employee is free to ask any questions about further educational opportunities. Along with the personal copy of the T.A.B.E. scores, the employee receives a copy of the IEP, a copy of the job analysis, and a listing of the required competencies for the job. If needed, the employee is scheduled into one or more classes within the Valmont 2000 program. At the end of the session, the employee fills out an employee survey.

After the counseling sessions, Dr. Jones and another Valmont 2000 staff member review the files to determine if any additional information surfaced during a session that would indicate another employee is in need of training. The training group lists are then prepared for the three areas of training.

Training Sessions

After the lists are compiled for the three training areas of reading, writing, and math, the training courses are coded A, B, and C. Each supervisor is given a list of the people in that specific department who need training. Each person's name is followed only by the code letter of A, B, or C. There is no way for the supervisor to determine from this list which particular training course an employee will be taking. The supervisor is also given a schedule of the different courses; each course generally is offered at several different times. Again, the courses are identified only with the code letters A, B, and C. The supervisor schedules each employee into an appropriately coded course. The supervisor has this input into the employee course scheduling so that production will not be hindered.

Dr. Ken Jones and a staff of qualified instructors conduct all of the training sessions for Valmont 2000. All members of the education staff, like all the other Valmont 2000 personnel, are employed by Metropolitan Community College.

The work-related skills covered by the Valmont 2000 program are reading, writing, and math. The 1 1/2 hour training meetings are held twice a week for 8 weeks. There are generally 5-10 students in each training group. The training area is a rather informal setting where all students work, sitting in a group, around two large tables.

The first meeting of each session starts with an orientation. This includes an explanation of Valmont 2000 and an introduction to the material that will be covered during the session. Any employee questions will be answered at this time.

During the first week of the session, the instructor will administer a pretest that has been written by the education staff. This pretest will let the instructor know which areas need to be stressed during the training meetings. The results of this test will be seen only by the student, the instructor, and, possibly, Ken Jones, who directs the activities of the education staff for Valmont 2000.

In each of the three training areas, learning guides and workplace problems are used to build skills in the particular area of study. Periodically, a textbook may be used as a supplement. Other media, such as interactive videos, may be used. After written tasks have been completed, there will be occasions when the students will check their own work during the training meeting. Review lessons or quizzes may be given a few times during the session; one or two tests will also be given so that the students can see their own progress. All of the work done in connection with the session will be kept in a student folder. The work will be seen only by the student and the instructor. All through the session, the instructor will provide written feedback on the students' papers so that the students will be able to see their own progress. If an instructor would like some advice on how to provide additional help to a particular student in a specific area, that instructor will get that advice from Ken Jones or other faculty members. Sometime near the end of the session, student work will be returned to the students. However, in order to protect the integrity of the tests, those cannot be returned. Absences during the training sessions will be tracked to determine the reason (for example, illness, disability, or production needs).

At the end of the session a posttest (similar to the pretest given at the beginning of the session) will be administered. Once again, the results of this test will be seen only by the student, the instructor, and, possibly, Ken Jones. At this time, the student will also retake the portions of the Test of Adult Basic Education (TABE) that pertain to the particular subject area covered during the session. For example, if the session covered math, only the math portions of the TABE would be retaken. The results of this testing will be filed with the results of the TABE test taken earlier and will be kept within the records of Metropolitan Community College. Students will also complete several surveys and a teacher evaluation form. These will be used by the Valmont 2000 staff.

In order to complete the training successfully, a student must achieve an average of 80% or more on all of the session work and tests assigned by the instructor. None of the scores from the TABE, the pretests, or the posttests will be used to figure a student's average.

Students who successfully complete the requirements will receive a certificate, a copy of the results of their latest TABE scores, and a copy of their Individual Education/Career Plan (IEP). All of this will be sent to each individual student's home through the mail.

If a student is not successful in completing the training requirements, an attempt is made by the Valmont 2000 education staff to determine whether the student is having difficulty doing the work or simply is not trying. The names of students who are having difficulty meeting the minimum requirements of an 80% average are referred to Ken Jones. The instructor and Dr. Jones discuss appropriate options to help the employee meet the training requirements. Each case is handled individually. The instructor contacts the employee regarding the options. Options may include retaking the class, making up incomplete work, getting special needs counseling from Metro staff, or other ways to *help the individual be successful.*

If a student does not meet the training requirements because the student will not try to do the work, this is discussed with a Human Resources representative. The particular circumstances of the situation are considered, options are discussed, and each case is handled individually as circumstances warrant.

Reading Sessions

These sessions address, among other skills, reading to follow directions, locate details, find information, and draw conclusions.

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Writing Sessions

These sessions address, among other skills, writing to report information, pass on information, make requests, and respond to requests.

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During both the reading and writing sessions, a training meeting is devoted to E-mail training. It is conducted by Pat Fiedler, the E-mail trainer for Valmont. Nothing is turned in to anyone for this meeting, it is strictly an opportunity to gain computer experience. At this time each student is given an access number for E-mail. No one else can access a person's E-mail unless the individual gives out the necessary password. It is possible that, in the future, training for other computer related skills will be added to the writing session.

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Math Sessions

These sessions address, among other skills, performing calculations and conversions, and expressing relationships.

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The workplace problems are situations that have been written by the instructors or the employees.

Depending on the level of understanding of the training material and the level of progress made during the session, a student may have the opportunity to take the posttest and complete this class in less than the designated 8 weeks.

Phone Numbers

Name	Ext.
Mr. Whit Bonifant, * Manufacturing Manager, ICPD	3816
Ms. Vanessa Brown, * Human Resources Manager, ICPD	3146
Dr. Margaret Durr, Director of * Valmont 2000	3128
Dr. Ken Jones, Full Time Instructor, * Directs education staff activities	3157
Mr. Steve Narans, Human Resources * Representative	3142
Ms. Hope Songster, Secretary Valmont 2000	3151
Mr. Kirby Sullivan, * Human Resources Manager, Irrigation	3256
Mr. Dennis Thome, * Vice President of Operations, Irrigation	3458
Ms. JoAnne Woleben, Coordinator Mentor Training, Valmont 2000	3111

*Members of Valmont 2000 Task Force-- See page Why Me? 4

Sunday World-Herald

Business

SUNDAY WORLD-HERALD February 6, 1994

ED RATH/THE WORLD-HERALD

VALLEY PLANT: Manufacturing supervisor Doug Hansen, left, talks with Mogens Bay in Valmont's new building, which is used for painting poles.

'In my opinion the CEO's seat should be a hot seat. You are paid well as a CEO. You work for the shareholders. There is no protection in any job, and I'm not looking for a job that is protected. I will give this job my be[illegible] am successful I will [illegible] not. I [illegible]

SUNDAY WORLD-HERALD February 6, 1994

Valmont's Boss Uses Worldly Experience

Firm Seeks New International Markets

BY JOHN TAYLOR
WORLD-HERALD STAFF WRITER

Valley, Neb. — He attended the funerals of Mao Tse-tung and Chou En-lai, and he watched the "Gang of Four" paraded through the streets.

He negotiated contracts calling for the buying and selling of millions of dollars worth of commodities and merchandise.

He was, at the time, the only Western businessman living and working in the People's Republic of China, when history was being made with the deaths of Mao, the founder of the Chinese Communist Party, and Premier Chou En-lai, and with the arrest of Mao's widow and three other loyalists.

This was the mid-1970s, and Mogens Bay (pronounced "moans by") was all of 27 years old. He was the sole representative in China of the East Asiatic Co., a $5-billion-a-year, multinational company based in Copenhagen, Denmark, and involved in shipping, industry and trade.

"They gave you a lot of authority at a very young age," said Bay.

That experience of being thrust abruptly into a position of responsibility came in handy last August when Bay, now 45, was named president and chief executive officer of Valmont Industries Inc. of Valley, Neb.

Bay, who had been with Valmont 14 years and was serving as president and chief operating officer of Valmont's irrigation products division, was promoted after the surprising resignation of William F. Welsh II, who had headed Valmont since 1988.

Bay took over a company whose sales have been flat for the last five years at slightly more than $400 million a year. Valmont is the world's largest manufacturer of center pivot and linear move irrigation equipment. It also produces light poles and traffic standards and electric lighting ballasts, devices that control the light output of fluorescent lights.

In recent years the company has been profitable, except for an $8 million loss in the recession year of 1991. But through the years the earnings have been uneven. Valmont's earnings, perhaps more than those of many other companies, are subject to the vicissitudes of weather and the economy, among other things.

Try as it might to diversify — even to the point of selling computers — Valmont hasn't been totally able to avoid cyclical performances.

Bay acknowledged the problem but by such things as "geographic expansion." By that he means that he would like to see Valmont have a stronger presence both in the United States and in foreign countries.

"If you have a construction economy in North America that may be depressed at a certain time, it is unlikely that the construction market in Western Europe or some other part of the world will be depressed at the same time," he said. "So the cyclicality of the construction business can be leveled out by geographic expansion."

The same is true, he said, of the irrigation business.

Bay brings his expertise in international business to Valmont at a period when the company is looking to expand beyond what it already has done in foreign countries. Valmont is active in Europe, in the Middle East, Africa, Latin America and Canada and over the years has done business in about 40 countries.

It was because of Valmont's first venture in China that Bay became acquainted with, and later joined, the Nebraska company.

Bay was born in Vejle, Denmark, and despite an early desire to become a lawyer (he studied law at Aarhus University from 1968 to 1971), turned toward business. His father had his own construction business and young Bay frequently traveled with him throughout Europe.

To be a businessman in Denmark, Bay said, automatically means that one is involved in international business.

"Where I grew up in Denmark if you went 100 miles in either direction you were outside the country," he said.

After graduating from the University of Copenhagen, he entered the East Asiatic Company School of International Business in Copenhagen. The school is unique and it is strict, Bay said.

When he started, the school annually enrolled only 50 students, young men (women weren't allowed in the 1970s) who wanted to specialize in international trade. For two years classes were held from 7 a.m. to 10 a.m., after which the student would work in one of the company's departments. At 4 p.m. the student would return to school and would have classes until 9 p.m.

When the time came for students to graduate, a select few were sent to places like Nigeria, New York, Jakarta or, in Bay's case, to Hong Kong en route to Beijing.

There was no contract signed, but Bay and the others knew the rules:

BEST COPY AVAILABLE

Mogens Bay

ment to the company.

"When I went to Hong Kong it was for three years," he said. "I had to spend my vacations there, too. It was very important for them (the company's executives) that you cut your ties back home and focused on the part of the world they sent you to."

In return, the young missionaries to the business world got all that authority.

"In the morning," Bay said, "I would negotiate the export of soybeans, at lunch I'd be talking about printing machines from Germany and in the afternoon I'd be talking about tractors from Moline (Ill.). I would be signing multimillion-dollar contracts."

Bay worked out of an office at the Beijing Hotel. He did everything, and when he had to travel about town he did it on the company bicycle. He had no car.

Bay in effect became a kind of official greeter to the heads of western companies. "China was so closed that every time a U.S. company was invited to come in, it usually had the chairman come," he said.

That's how Bay first met Robert Daugherty, founder of Valmont, who remains its chairman. In November 1977 Daugherty traveled to China and succeeded in getting an order for irrigation equipment. Bay's company became a representative of Valmont in China.

The following year Daugherty returned to China, and the two men traveled together. "By the end of the year he had convinced me that leaving a $5 billion company and joining a $75 million company was the thing to do," Bay said.

Still in his late 20s and brimming with confidence rightly gained, Bay did not then view the move as a gamble. "But in retrospect clearly it was," he said.

He started with Valmont as regional vice president, based in Hong Kong, where, he said, "we did some good business, but nothing extraordinary."

In 1980 he was asked to come to Omaha. "That was the real decision," he said. "That's when I did more thinking. Everybody I talked to said I would be crazy if I moved to Nebraska. As it turned out my decision was based on the fact that if I didn't move to Omaha I would never know what I missed."

He was named vice president of sales and was at the Valley office long enough to meet and marry his wife Cindy. The family, which includes Sarah, who is 18, moved to Madrid, Spain, where Bay worked from 1982 to 1986.

He was appointed president and general manager of the international division in 1986 and in 1990 was named head of the irrigation division.

Because he left China so long ago and has severed many of his business connections, Bay said he doesn't view his experience there as any added advantage to Valmont.

But he makes it clear he is not intimidated by the huge market that awaits in Asia — by one estimate the region may spend $1 trillion over the next decade for highways, telephone lines and power plants — and the light and transmission poles that go with that.

"I'm not uncomfortable doing business in China or investing in China when the right time comes," he said. "We've done business in China, exporting to the country. We have never invested in China. It is so big that you probably need to participate through

Please turn to Page 8, Col. 1

Valmont's Boss Uses Worldly Experience

Continued from Page 1

an investment — acquiring a company, doing a joint venture, doing a startup."

China does not represent Valmont's whole world, however. The company's bread and butter is still close to home.

Bay noted that "the vast majority of revenue" from the company's irrigation and light pole business is generated in North America and will continue to come from the area.

"Our challenge is going to be to do what we have been doing so well in North America and repeat it everywhere it makes economic sense," he said.

Valmont also has begun to narrow its focus, he said. The company entered 1993 in six businesses. Besides the irrigation, light pole and ballast business, Valmont also was involved in InaCom, Gate City Steel and Good-All Electric Inc., a maker of devices that reduce corrosion in metal products.

Valmont has sold its investment in InaCom, is closing down Gate City and, at the end of the year, sold Good-All.

"We have today a very strong focus on three businesses — one to fix, two to grow," Bay said.

The businesses that he expects to grow are irrigation and light poles. "The Surface Transportation Act provides a good foundation for the transmission pole, light pole, traffic structure and tubing business," he said, referring to the planned $151 billion in federal spending over the next five years.

"And the favorable farm economy provides a very good drive for our irrigation businesses."

The area that needs to be fixed, Bay said, is the ballast business. "In the ballast business we are a distant No. 3," he said. "We bought that business from General Electric back in 1987. It's a business that we are still struggling with."

In an effort to make it profitable, the company has moved its operations to El Paso, Texas, and Juarez, Mexico, 20 miles apart. "In that business we have to become the low cost producer," he said. "We have to find the niches where we can out-service and outperform the bigger competitors."

Bay said he looks forward to such challenges. "In my opinion the CEO's seat should be a hot seat," he said. "You are paid well as a CEO. You work for the shareholders. There is no protection in any job, and I'm not looking for a job that is protected. I will give this job my best shot, and if I am successful I will have it for a long time. If I'm not, I shouldn't."

To succeed, Bay said, the head of a company should "empower people to do the right thing."

"I'm absolutely convinced that everybody comes to work every day to do a good job, and if they do not do a good job it's usually not their problem," he said. "The problem is that somehow we had a process in place that prevented them from doing a good job. Maybe we didn't have the right tools or procedures or maybe something else got in the way.

"So my view is always: If you have a problem, don't try and find somebody to point your finger at. Look at the process.

"I also believe that people who report to you have better ideas than you have. I believe you learn when you listen."

Dale Dauten

The corporate curmudgeon

Take, for instance, a Motorola plant I recently visited, one that was once one of the company's worst, so inefficient that nearly half its output had to be scrapped. Two Motorola veterans, Jerry Latimer and Mike Mandracchia, were sent in. They discovered a discouraged work force, employees who paid no attention to manufacturing specifications because (a) many couldn't or wouldn't read, and (b) the specs were unreadable anyway, written in technical jargon.

Motorola and Merex tested every employee and assigned each one to communications classes. The Merex instructors had a big advantage over public school teachers—no school bureaucracy, small classes (12 to 15 students) separated by skill levels, and students who've seen enough of life to appreciate a second chance at an education.

The mutual victories of the instructors and students are heartwarming.

There was the grandmother who, during a session on vowels and consonants, blurted out triumphantly, "So that's what Vanna means!"

A Vietnamese woman who learned to read English brought to class an "English Cake." Asked what that was, she said, "It's the first time I've ever baked a cake using a recipe I read in English—so it's my English Cake."

And there was the woman who boasted, "Last night I helped my son with his homework for the first time. I showed *him* how to do it!"

What a shame that our high schools aren't places of intellectual passion and joy. Still, it's good to know that there are companies like Motorola, ones willing to reclaim workers that our schools left behind.

It pleases me to report that, after rewriting the manufacturing specifications and making sure everyone could read them, output at the Motorola plant doubled. Now the employees have learned to learn. Mike Mandracchia told me that the best evidence of this new attitude can be seen in Motorola's "Total Customer Satisfaction" competition. (This is an annual event where teams from all over the world present their innovations.) Before the turnaround, Mandracchia wondered if the factory could field a single team. This year, so many employees volunteered for the competition he had to close the plant during presentation week.

SECTION
OMAHA
NEBRASKA
AUGUST 1, 1993
G
18 PAGES

Training Is a Must For Getting Ahead And Staying Ahead

BY CAROL KLEIMAN
THE CHICAGO TRIBUNE

Chicago — Training, training, training.

And after that, more training.

It's the secret of getting and keeping a job with a future in high-tech society.

Nationwide, $210 billion is spent in worker training, from high school vocational courses to corporate programs for new employees and everything in between, according to the American Society for Training and Development, based in Alexandria, Va.

And that's only the beginning.

Continuing, on-the-job education comes next and is essential: Corporations spend about $30 billion of the $210 billion on employer-sponsored training, the association reports.

Employers save money in the long run by having a well-trained, highly skilled work force. Employees, too, benefit from training at every level, not just on the job.

Workers who needed training to qualify for their jobs earn more and are unemployed less than those who did not need training, says Thomas Amirault, economist in the office of employment projections of the U.S. Bureau of Labor Statistics.

Amirault, writing in Occupational Outlook Quarterly, a publication of the Labor Department, bases his conclusions on his analysis of the January 1991 Current Population Survey by the Bureau of the Census.

One of the questions asked by the Census Bureau was if the respondents needed training to qualify for their current jobs: 57 percent of the 114.6 million workers in the survey reported that they did.

Training given to those in the survey included scores of programs, among them auto repair, drafting, boilermaking, cosmetology, health care and computer science.

If you doubted that training is the key to survival in this tough job market, Amirault's findings about who needs job training, who gets it and the impact it has on careers will end all doubts.

"Training is usually required for jobs in occupations with the highest earnings and the lowest unemployment rates," the economist says. "Workers who needed training earned substantially more than those who did not."

Some of the economist's conclusions:

■ Workers who needed training to get their jobs earned $10,000 more annually than those who reported not needing training.

The gap was $15,000 yearly for sales personnel; for private household workers — traditionally an extremely low-paying field — it was $3,000.

■ Professional workers who didn't need training for their jobs had unemployment rates three times higher than those who did.

■ Sources of training were high school vocational programs; post-high school vocational programs; junior college or technical institute programs; programs in college and beyond; formal and informal company training; armed forces training; information from friends and relatives; and other non-work-related experience.

■ Training continued after being hired: Almost 47 million workers — 41 percent — had some skills training or further job-related education.

Most of the skill improvement training for people on the job went to executive, administrative and managerial employees and professional specialists.

Because training is such an important factor in a successful career, the question of who is getting trained becomes an important one.

"Training, across the board, is not very well-distributed," said Linda Hodo, director of training and organizational development at Rush-Presbyterian-St. Luke's Medical Center in Chicago. "We need better schools to train people for career paths in the trades and in technical and professional work."

Instead, corporations are attempting to fill in the gaps. But Ms. Hodo, a member of the board of the American Society for Training and Development, says on-the-job training generally "is skewed toward professional and white-collar workers."

She says that, nationwide, professionals get 27 percent of the $30 billion corporate training budget; managers, 22 percent; non-college graduates and technicians, 11 percent; professionals and sales personnel, 9 percent; skilled crafts, 9 percent; college-educated technical workers and supervisors, 8 percent; retail salespeople and secretaries, 5 percent; labor and production workers, 5 percent; and clerical workers, 4 percent.

But that's not the pattern at Rush medical center. Each of its 10,000 full-time employees — except doctors — gets training on some level," Ms. Hodo said. "It's free and on company time," she said.

She has a training staff of six and an annual budget of $1 million. The latter includes tuition reimbursement.

Ms. Hodo has advice for employers: "Make sure you have systems in place that match the right people in the right jobs. And, most important, make sure employees get the right training at the right time in their careers."

For employees, Ms. Hodo said: "Get all the training you can."

BEST COPY AVAILABLE

ATTACHMENT B

April 7, 1994

Dear

Here is your copy of the Valmont 2000 mentor handbook, as promised. The mentor for Dept. is : If you have any questions about the handbook, he should be able to answer them, or if you prefer, you may call me at ext. 3111.

The handbook is set up as a series of memos so that it can be revised easily. It has had some revisions already, as you can see, and there will be more revisions in the future. When the revisions are sent to you, a new Table of Contents will be included. The dates on the Table of Contents should coincide with each of the sections in the handbook. This will be one way for you to verify that the information in your book is "current."

Please, remember that there will be another training session for the mentors on Tuesday, April 12, at 7:00 a.m. Feel free to contact me (3111) with any questions, concerns, or comments about this handbook or the mentor training.

Sincerely,

JoAnne Woleben, Coordinator
Mentor Training, Valmont 2000

ATTACHMENT C

April 13, 1994

To:

From: JoAnne Woleben, Coordinator
Mentor Training, Valmont 2000

Re: Mentor Memos: **A Handbook for the Mentors of the Valmont 2000 Program**

Enclosed are additions and revisions for your Mentor Memos Handbook. Please update your book immediately with these pages.

Remove and discard
Table of Contents, dated April 06, 1994

Insert, directly in front of Dedication,
Table of Contents, dated April 13, 1994

Insert, directly in front of Counseling,
T.A.B.E. 6-7, dated April 13, 1994

(These pages give the explanations included in the T.A.B.E. Norms Book)

If you have any questions, concerns, or comments, please call me (ext. 3111).

Thank you.

ATTACHMENT D

Mentor Training Evaluation

Please circle the number that most closely expresses your feeling about each statement.

1. The Mentor Memos handbook addresses many of the concerns of the plant personnel.

I Disagree I Agree
1 2 3 4 5 6 7 8 9 10

2. If I think some information should be added to the Mentor Memos handbook, I feel confident that my suggestions would be considered and necessary information would be added.

I Disagree I Agree
1 2 3 4 5 6 7 8 9 10

3. The continually updated Mentor Memos handbook contains the information I need to deal with the questions that seem to be of most concern to the plant personnel.

I Disagree I Agree
1 2 3 4 5 6 7 8 9 10

4. The mentor training sessions have helped me understand more completely the reasons why Valmont is involved in Valmont 2000.

I Disagree I Agree
1 2 3 4 5 6 7 8 9 10

5. The mentor training sessions have given me a more thorough understanding of the different parts of the Valmont 2000 program.

I Disagree I Agree
1 2 3 4 5 6 7 8 9 10

Mentor Training Evaluation

Please circle the number that most closely expresses your feeling about each statement.

1. The Mentor Memos handbook addresses many of the concerns of the plant personnel.

I Disagree I Agree
1 2 3 4 5 6 7 8 9 10
8

2. If I think some information should be added to the Mentor Memos handbook, I feel confident that my suggestions would be considered and necessary information would be added.

I Disagree I Agree
1 2 3 4 5 6 7 8 9 10
9

3. The continually updated Mentor Memos handbook contains the information I need to deal with the questions that seem to be of most concern to the plant personnel.

I Disagree I Agree
1 2 3 4 5 6 7 8 9 10
7.2

4. The mentor training sessions have helped me understand more completely the reasons why Valmont is involved in Valmont 2000.

I Disagree I Agree
1 2 3 4 5 6 7 8 9 10
9.2

5. The mentor training sessions have given me a more thorough understanding of the different parts of the Valmont 2000 program.

I Disagree I Agree
1 2 3 4 5 6 7 8 9 10
8.2

6. The mentor training sessions have prepared me adequately to address any questions about Valmont 2000 that other plant personnel may ask me.

I Disagree I Agree
1 2 3 4 5 6 7 8 9 10
6.8

7. The trainer was responsive to any comments made by the mentors during the training sessions.

I Disagree I Agree
1 2 3 4 5 6 7 8 9 10
9.3

8. The trainer tried to provide as much information as possible about all aspects of the Valmont 2000 program.

I Disagree I Agree
1 2 3 4 5 6 7 8 9 10
9.3

9. The trainer included explanations that will help me answer questions that may be asked by other plant personnel.

I Disagree I Agree
1 2 3 4 5 6 7 8 9 10
8.7

10. With the knowledge we have now of the concerns of the plant personnel, the mentor training program provided a thorough preparation for me to address the questions I expect the other plant personnel to ask.

I Disagree I Agree
1 2 3 4 5 6 7 8 9 10
7.3

Comments:

Average rating = 8.3

ATTACHMENT E

RESULTS AND ACCOMPLISHMENTS

7.1 At the request of the Valmont management representatives the Valmont 2000 Task Force, the mentoring program was initiated with a small scale pilot program. Sixteen employees were recommended by their Valmont 2000 instructors and approved by their supervisors. From this group, 6 were recruited to take part in the pilot mentoring program. Recruitment was completed March 31, 1994.

7.2 Task Force members requested that this program require a minimal amount of training time. All of the mentor trainees took part in the scheduled 4 hours of training. Training was completed April 14, 1994. A follow-up meeting was held on June 29, 1994 to get feedback from the mentors and to further evaluate the mentor training and program.

7.3. A handbook (see Attachment A) was developed specifically for mentors for the Valmont 2000 program. All mentors and their supervisors (see Attachment B) received a copy of this handbook. IT was used throughout the training process. The mentors had the opportunity to refer to their own handbooks as needed for any mentoring activity. Handbooks were completed April 4, 1994, and have been revised appropriately since that time (see Attachment C).

7.4 All Valmont employee have had access to the mentors. A list of the mentors' names was published with an explanation that they were available to answer any questions regarding the Valmont 2000 program (see Attachment D). The list first appeared immediately after mentor training was completed and has been distributed several times. It is routinely included with the mailing to new Valmont 2000 class members.

7.5 Based on a 10-question evaluation immediately following the training, the mentors rated the mentor training 8.3 on a scale of 1 to 10 (see Attachment E).

7.6 The feedback about the mentor program has been positive. No negative feedback concerning the program has been received to date.

*See the section headed Summary of Major Accomplishments and Lessons Learned Concerning the Mentor Training and the Mentor Program for more complete explanations.

Objective 7: **Develop and implement through August 1994, Valmont 2000 mentoring program to assist new and/or current employees requesting mentors acquire essential basic or technical skills needed to start a new job or to learn a new technique or technology on the job.**

*	IMPLEMENTATION STRATEGIES	PERFORMANCE EVALUATION MEASURES	RESOURCES/PERSONNEL	TIMELINE
7.1	Recruit and identify mentors from a pool of experienced employees to serve as role models and job coaches as new employees enter jobs, or as other employees are promoted or need to adjust/learn new technologies introduced into jobs.	Data show a minimum of 30 experienced employees are recruited for Valmont 2000 Mentoring program.	Project Director Valmont HRD Manager Valmont Supervisors Valmont employees	June - July 1993
7.2	Train mentors utilizing training videos, role playing and other interactive learning experiences, in training sessions held quarterly.	100% mentors complete 8 hour mentor training program.	Project Director Project staff	August, Decemb 1993 March, June 19
7.3	Develop and distribute mentor handbooks.	Records document each mentor receives and uses Mentor Handbook during mentoring activity.	Project Director	August 1993
7.4	Assign mentor to colleague.	Records show 90% employees who request a mentor are provided a role model mentor.	Project Director Project Counselor	August 1993 - July 1994
7.5	Evaluate mentor training.	Mentors rate mentoring training provided 8.5 or better on 1-10 scale.	Mentors External Evaluater	August 1993 - July 1994
7.6	Evaluate mentoring experience.	Participants, mentors, and Valmont managers rate mentor program 9.0 or better on 1-10 scale.	Participants Mentors Project Director External Evaluator Valmont HRD Manager Advisory Team	August 1993 - August 1994

ATTACHMENT F

F

Mentor Follow-up Meeting
Lunchtime
June 29, 1994

1. New session starts next week
   List of mentors sent out this week

2. Approximate number of contacts so far

3. Suggested changes in training process or materials

4. Discussion of types of contacts

Attachment

G

TEACHER ASSISTANT PROGRAM

TEACHING ASSISTANT ORIENTATION

When: April 29, 1994

Time: 8:00 a.m. - 1:00 p.m.

Where: Valmont 2000 Office

AGENDA

8:00 a.m. - 9:00 a.m.	Oreintation Manual Valmont 2000 Overview	Margaret Durr
9:00 a.m.-- 10:30 a.m.	Tour	Rob King
10:30 a.m.- 12:00 p.m.	Curriculum Overview	Part Time Instructors
12:00 p.m. - 1:00 p.m.	Lunch	Teaching Assistants/Instructor

VALMONT 2000 PROGRAM

TEACHER ASSISTANTS FACT SHEET

The Valmont 2000 Teacher Assistanting program is now seeking eligible individual/group Teacher Assistants. The rate of pay is $7.00 per hour. The hours per week may vary from 3-15 hours. Duties and responsibilities will include the following:

1. Provide group or individual Teacher Assistanting in basic skills areas: reading, writing, computation, or solving specific Valmont related work problems, writing E-Mail messages, reading reference materials, completing hazard reports, etc.
2. Assist students in the Valmont Learning Center with computer assisted learning.
3. Serve as a support and resource person to participants requiring special accommodations for learning disabilities.

To become a Teacher Assistant in the Valmont 2000 Program you must have the following qualifications:

1. Be willing to work with other adult learners who have academic or special needs;
2. Demonstrated academic proficiency;
3. Be willing to secure two (2) letters of recommendation from the local community as to academic and character references. Must not be relatives of Valmont employees;
4. Be willing to adhere to schedules in a timely manner;
5. Be willing to submit reports as directed;
6. Be an individual of high standards and personal integrity;
7. Be willing to attend in-service training and related meetings;
8. Be academically proficient to move a student from academic deficiencies to academic successes;
9. Be willing to evaluate students progress and similarly to be evaluated;
10. Be familiar with microcomputers and computer assisted learning;

CANDIDATE RATING FORM

CANDIDATE: ______________________ COMMITTEE MEMBER: __________

POSITION: ______________________

JOB RELATED SELECTION CRITERIA	EXCEPTIONAL STRONG	STRONG	MEETS MINIMUMS	BELOW MINIMUMS
1. Experience with Adult Learners				
2. Mastery of Subject Area				
3. Flexibility				
4. Confidentiality				
5. Commitment				
6. Communication				
7.				
8.				
9.				
10.				
11.				
12.				

OVERALL RATING

NOTES (CONTINUE ON REVERSE)

Signature: ______________________ Date: ______________________

VALMONT 2000

POSITION: Teacher Assistant **GROUP:**

SUPERVISOR'S POSITION: Director of Valmont 2000 **DATE PREPARED:** 4/29/94

POSITION OF CABINET MEMBER IN CHARGE OF UNIT: V.P. of Educational Affairs

COST CENTER NAME: Valmont 2000

BRIEF SUMMARY OF POSITION'S PURPOSE: Provides assistance to the Full and Part Time Instructors in working with students on either a group or one-to one basis.

POSITIONS SUPERVISED: None

ESSENTIAL FUNCTIONS, RESPONSIBILITIES, AND DUTIES:

1. Provides group or individual tutoring in basic skills areas: reading, writing, computation, or solving specific Valmont related work problems, writing E-Mail messages, reading reference materials, completing hazard reports, etc.
2. Assists students in the Valmont Learning Center with computer assisted learning.
3. Serves as a support and resource person to participants requiring special accommodations for learning disabilities.
4. Maintains student records and files according to established procedures under the direction of the full or part-time instructor.
5. Sends messages and prepare reports. Utilizing the computer mail system and word processing packages.
6. Serves as a support person to the participants of the Valmont 2000 program.
7. Operates a photocopier machine.
8. Maintains personal time sheet in an accurate and honest manner.

WORKING CONDITIONS:

Sedentary work using arm, wrist, and finger movements while operating a keyboard. Stands occasionally to operate the photocopier or file papers. Speaks frequently while interacting with others, either in person or on the telephone.

EQUIPMENT USED IN POSITION:

Operates various office equipment such as facsimile machine, photocopying machine, computer, typewriter and telephone.

SKILLS, KNOWLEDGE, AND ABILITIES:

1. Oral communication skills.
2. Finger dexterity for keyboarding and equipment operation.
3. Judgment and reasoning skills.
4. Eye-hand coordination.
5. Written communication skills.
6. Attention to detail.
7. Ability to follow a model.
8. Organizational skills.

MINIMUM QUALIFICATIONS FOR EDUCATION AND EXPERIENCE

1. High school diploma, Associate Degree preferred.
2. One year related experience.
3. Excellent communication and interpersonal skills.
4. Familiarity with microcomputers and computer assisted learning essential.
5. Familiarity with needs of adults students.
6. Commitment to the goals of valuing diversity demonstrated through prior work experience.
7. Demonstrated academic proficiency in order to move a student from academic deficiencies to academic successes.
8. Ability to evaluate students progress and similarly to be evaluated;

Attachment

H

August 4, 1994

Average Age = 37.4

PRE-TABE SCORES FOR ALL VALMONT EMPLOYEES TESTED

(n=447)

	Average	Grade Equivalency
Reading Test Score	790	12.9+
Math Test Score	784	9.7
Language Test Score	735	9.5
Total Battery	769	10.7

259 individuals have completed at least one training session.

PRE AND POST TABE SCORES FOR VALMONT EMPLOYEES WHO HAVE COMPLETED TRAINING IN READING

(n=59)

	Average	Grade Equivalency
Pre-Training Score	747	7.7
Post Training Score	756	8.4

PRE AND POST TABE SCORES FOR VALMONT EMPLOYEES WHO HAVE COMPLETED TRAINING IN MATH

(n=121)

	Average	Grade Equivalency
Pre-Training Score	778	9.1
Post Training Score	795	12.9

PRE AND POST SCORES FOR EMPLOYEES WHO HAVE COMPLETED TRAINING IN WRITING

(n=196)

	Average	Grade Equivalency
Pre-Training Score	727	8.6
Post Training Score	745	11.5

BY DIVISION

PRE-TABE SCORES FOR ALL VALMONT EMPLOYEES TESTED

	IRRIGATION (n=266)		ICPD (n=170)	
	Average	Grade Equivalency	Average	Grade Equivalency
Reading Test Score	787	12.9+	794	12.9+
Math Test Score	732	9.4	787	10.4
Language Test Score	734	9.4	736	9.6
Total Battery	768	10.5	772	11.5

COMPLETED TRAINING IN READING

	IRRIGATION (n=44)		ICPD (n=15)	
	Average	Grade Equivalency	Average	Grade Equivalency
Pre Test Score	746	7.6	749	7.8
Post Test Score	755	8.3	758	8.6

COMPLETED TRAINING IN MATH

	IRRIGATION (n=76)		ICPD (n=45)	
	Average	Grade Equivalency	Average	Grade Equivalency
Pre Test Score	775	8.8	783	9.5
Post Test Score	790	11.1	802	12.9+

COMPLETED TRAINING IN WRITING/LANGUAGE

	IRRIGATION (n=114)		ICPD (n=82)	
	Average	Grade Equivalency	Average	Grade Equivalency
Pre Test Score	725	8.4	729	8.8
Post Test Score	743	10.6	750	12.8

INSTRUCTOR EVALUATION OF PROGRAM

INSTRUCTOR SURVEY ON THE VALMONT 2000 PROGRAM

DIRECTIONS: Please answer the questions that follow. Feel free to write additional comments on another sheet of paper. Return the completed survey by 9/2/94.

The Purpose of this survey is to solicit your opinions on the effectiveness of the Valmont 2000 Training Program. Your responses will be grouped with the other instructors. Thank you for your responses.

\PART 1: INSTRUCTIONAL MATERIALS

1. In your opinion, how effective were the learning guides as instructional materials for adult learners?

2. In your opinion, how effective was the interactive video program as an instructional tool?

3. In your opinion, how effective was the Valmont 2000 IEP/Career Plan for Individualizing instruction and reporting student information?

4. In your opinion, how effective was the Data Transmittal Sheets and the Required Competencies for the job reporting sheets for curriculum development?

5. In your opinion, how effective were the work problems as instructional materials?

6. In your opinion, how effective were the textbooks as instructional materials?

7. In your opinion, how satisfied were you with the availability of other resources such as books, paper, and other supplies?

8. In your opinion, did you feel that the curriculum was responsive to the needs of the learner/teacher?

PART II: EVALUATION

9. In your opinion, how effective were the informal assessments as pre/post measurements of student progress?

10. In your opinion, how effective were the TABE tests as a screening tool in to the Valmont 2000 program and as an assessment of student improvement?

11. In your opinion, how effective were the unit/midterm tests in measuring student progress?

PART III: ADMINISTRATIVE

12. In your opinion, how effective was the evaluation process (self-evaluation, peer evaluation, teacher/teacher assistant evaluation, supervisor evaluation and feedback session) for your professional development?

13. In your opinion, how effective was the scheduling process for the training sessions?

14. In your opinion, how effective was the physical classroom environment for facilitating learning?

15. In your opinion, what effect did the instructor-to-student ratio have on your ability to provide instruction?

16. In your opinion, what do you believe was the impact of Valmont 2000 training on the employees. Please cite examples.

17 In your opinion, how beneficial were the faculty meetings, in terms of providing input to the program and interaction with other staff.

18. In your opinion, how responsive were the administrators of the program in responding to your concerns (academic, professional, etc.)?

PART IV: MISCELLANEOUS

19. In your opinion, what were the strengths of the Valmont 2000 Workplace Literacy Program?

20. In your opinion, what were the areas in need of improvement?

21. In your opinion, do you feel Valmont Industries, Inc. demonstrated a commitment to Valmont 2000?

22. In your opinion, do you feel Metropolitan Community College demonstrated a commitment to Valmont 2000?

23. What specific suggestions would you offer to improve the program?

24. In your opinion, how effective were the staff training opportunities to prepare you for teaching in the workplace?

In order for me to follow-up on any of your responses, please sign your name.

RESPONDENT'S NAME: ______________________

VALMONT 2000 SUPERVISOR SURVEY

We need your assistance to meet evaluation requirements of the Valmont 2000 Project.

The attached survey is one of many tools used to assess the project. However, it is unique because it accesses direct feedback from the individuals who have the greatest opportunity to observe employee behaviors.

The survey should be completed by all supervisors and lead men who have had one or more employees participate in Valmont 2000 training.

Please return your completed survey, using the envelope provided, by **August 1**.

If you have any questions concerning the survey, contact Kevin Spier at 3111.

Thank you for your cooperation. We value all of your feedback.

VALMONT 2000
SUPERVISOR SURVEY

The questions in this survey are for research and developmental purposes and will be used by Metropolitan Community College to assist in evaluating the Valmont 2000 project. The confidentiality of your responses will be maintained at all times.

Name: ____________________ **Job Title:** ____________

Department Name: ____________________ **Department #:** ____________

Work Phone Ext: ____________________ **Age:** ____________________

How many years have you worked at Valmont?

_____ **0 to 5 years** _______ **16 years and over**

_____ **6 - 10 years**

_____ **11 - 15 years**

Instructions: Circle the number on the line that best describes your response to the question. Note that some items have agree/disagree responses and some have other types of responses.

Part I: Value of Reading, Writing and Math Training

1. Reading training provided by Valmont 2000 has improved the reading skills of employees.

1	2	3	4	5
Strongly disagree		Neither Agree nor Disagree		Strongly Agree

2. In regard to the employees that you supervise, and considering only the reading instruction provided, which response best describes the results of their participation in the program.

1	2	3	4	5
I have seen no examples of improved performance	I have seen at least one example of improved performance	I have seen at least two examples of improved performance	I have seen more than two examples of improved performance	I have seen many examples of improved performance

3. From conversations with employees that you supervise, have they told you that the reading instruction had caused them to read better or to be more interested in reading.

1	2	3	4	5
I have seen no examples of improved performance	I have seen at least one example of improved performance	I have seen at least two examples of improved performance	I have seen more than two examples of improved performance	I have seen many examples of improved performance

4. Writing training provided by the Valmont 2000 program has improved the writing skills of employees.

1	2	3	4	5
Strongly disagree		Neither Agree nor Disagree		Strongly Agree

5. In regard to employees that you supervise, and considering only the writing instruction provided, which response best describes the results of their participation in the program?

1	2	3	4	5
I have seen no examples of improved performance	I have seen at least one example of improved performance	I have seen at least two examples of improved performance	I have seen more than two examples of improved performance	I have seen many examples of improved performance

6. From conversations with employees that you supervise, have they told you that the writing instruction has caused them to write better or to be more interested in writing.

1	2	3	4	5
I have not heard of any such instance	I have heard of at least one instance	I have heard of at least two instances	I have heard of more than two instances	I have heard of many instances

7. Math training provided by the Valmont 2000 program has improved the math skills of employees.

1	2	3	4	5
Strongly disagree		Neither Agree nor Disagree		Strongly Agree

8. In regard to the employees that you supervise, and considering only the math instruction, which response best describes the results of their participation in the program.

1	2	3	4	5
I have seen no examples of improved performance	I have seen at least one example of improved performance	I have seen at least two examples of improved performance	I have seen more than two examples of improved performance	I have seen many examples of improved performance

9. From conversations with employees that you supervise, have they told you that the math instruction has caused them to do math better or to be more interested in math.

1	2	3	4	5
I have not heard of any such instance	I have heard of at least one instance	I have heard of at least two instances	I have heard of more than two instances	I have heard of many instances

PART II: Improved Work Skills and Work Related Skills

10. Valmont 2000 training has improved the performance of employees in JIT meetings, Project Impact meetings, and other meetings.

1	2	3	4	5
Don't Think so		Maybe, but hard to tell		Definitely

11. Valmont 2000 training has improved the performance of employees in filling out forms.

1	2	3	4	5
Don't Think so		Maybe, but hard to tell		Definitely

12. Valmont 2000 training has improved employee performance in their use of E-mail.

1	2	3	4	5
Don't Think so		Maybe, but hard to tell		Definitely

13. Valmont 2000 training improves the participants confidence level when approaching changes on the job.

1	2	3	4	5
Don't Think so		Maybe, but hard to tell		Definitely

14. Valmont 2000 training has helped participants to be better qualified for advancement.

1	2	3	4	5
Don't Think so		Maybe, but hard to tell		Definitely

15. Valmont 2000 training has helped participants to be better qualified for cross-training.

1	2	3	4	5
Don't Think so		Maybe, but hard to tell		Definitely

16. Valmont 2000 participants have increased their reading and writing related to safety.

1	2	3	4	5
Don't Think so		Maybe, but hard to tell		Definitely

17. Valmont 2000 has helped its participants decrease the number of reworks/rejects.

1	2	3	4	5
Don't Think so		Maybe, but hard to tell		Definitely

18. Valmont 2000 has helped its participants to become more productive in their jobs.

1	2	3	4	5
Don't Think so		Maybe, but hard to tell		Definitely

19. Valmont 2000 has helped its participants to work more efficiently.

1	2	3	4	5
Don't Think so		Maybe, but hard to tell		Definitely

PART III - GENERAL QUESTIONS

20. Considering the entire Valmont 2000 program, which response best agrees with your observations regarding performance of employees.

1	2	3	4	5
I have seen no examples of improved performance	I have seen at least one example of improved performance	I have seen at least two examples of improved performance	I have seen more than two examples of improved performance	I have seen many examples of improved performance

21. In conversations with the employees that you supervise, have they told you that they were doing better work because of their participation in the Valmont 2000 program.

1	2	3	4	5
None have told me that their work is better	At least on has told me that their work is better	at least two have told me that their work is better	more than two have told me that their work is better	Many have have told me that their work is better.

22. Valmont 2000 has helped increase interest in outside education.

1	2	3	4	5
Strongly disagree		Neither Agree nor Disagree		Strongly Agree

23. Valmont 2000 has helped increase the number of tuition reimbursement requests.

1	2	3	4	5
Strongly disagree		Neither Agree nor Disagree		Strongly Agree

24. Considering the entire Valmont 2000 program, the morale of employees has improved.

1	2	3	4	5
Strongly disagree		Neither Agree nor Disagree		Strongly Agree

25. Employees who participated in Valmont 2000 training are supportive of the program.

1	2	3	4	5
Strongly disagree		Neither Agree nor Disagree		Strongly Agree

26. All things considered, Valmont 2000 has been beneficial to Valmont employees.

1	2	3	4	5
Strongly disagree		Neither Agree nor Disagree		Strongly Agree

27. Valmont 2000 participants have made positive comments about their training.

1	2	3	4	5
Strongly disagree		Neither Agree nor Disagree		Strongly Agree

28. The overall effect of the Valmont 2000 program has been to improve the performance of employees.

1	2	3	4	5
Strongly disagree		Neither Agree nor Disagree		Strongly Agree

29. Valmont 2000 participants would be willing to come forward and share their feelings about their training.

1	2	3	4	5
Strongly disagree		Neither Agree nor Disagree		Strongly Agree

PART IV: NARRATIVE AT THE END OF EACH SECTION

30. Have you observed examples of behavior by Valmont 2000 participants that suggest application of their training. If so, please cite.

31. Not all of the employees had to attend classes because their scores were high enough to show that they did not need the classes. Did the fact that some employees did not have to attend classes create a problem where some employees were identified as "smart" or "dumb." Comment on this.

32. Sometimes you had to send some of your employees out for testing, counseling, and for attendance at classes. Did this cause you any important problems? Do you have any suggestions for handling this in some better way?

33. Do you have any suggestions as to how the Valmont 2000 program could be improved? For example, additional services, better information, better communication, etc.

CASE STUDIES

CASE STUDY # 1

This employee is a 39 year old white male who is a lead man in the paint department. He has been with Valmont for more than 6 years.

This employee was in both math and writing classes. He said that he looked forward to going to the classes and continued to have a positive attitude all the way through both classes.

This employee was in a small math class. He says that this enabled the instructor to provide more attention and assisstance to each class member. He says that less individual help was available in the writing class. He rates the quality of instruction in the writing class as good and the quality of instruction in the math class as better than the writing class.

He says that most of what he got out of the math class was a good refresher course. He says that taking the class probably has made him a better employee, but there has been no dramatic difference. He says that he has some interest in taking more classes in math. When asked if taking the classes changed his life outside of class, he said that he was now able to help his 7th grader with math problems.

This employee noted that there were a few class members who had a poor attitude that never improved. He cites the problem but suggests no remedy.

CASE STUDY # 2

This employee is a 38 year old white male who works in galvanizing. He has been at Valmont less than 5 years.

Valmont 2000 staff assigned this employee to the math class. He said that he had a negative attitude before he started the class, but he decided to try to make the best of it. He says that his experience in class caused him to have a more positive attutude.

He thought the content of the class was appropriate for adults. He said that the instructor used a variety of methods that included an outside speaker. The instructor taught using examples taken from, and applied to work situations. He judged the quality of instuction to fall somewhere between good and excellent.

This employee said the math class was scheduled at a very busy time of the year. He would have preferred it to be a a time of the year when they were not so busy.

He felt that the class has made him a somewhat better employee. He learned, or relearned, how to divide decimals, how to place the decimal point, how to change fractions to decimals, and the meaning of mathematical signs.

CASE STUDY #3

This employee is a 46 year old Hispanic female who works in the paint shop. She has had some college work and has worked at Valmont more than 11 years.

Valmont 2000 staff assigned this employee to the math class. She says that she, along with the rest of the class members, started the class with a good attitude and maintained that good attitude.

This employee said that the instructor did the things that make a good class. The instructor went slow and took time to carefully answer questions. The instructor asked students to bring materials or examples of math problems to use as material for instruction. This employee rated the instruction as good and said that it was a good general review of math - just what the class needed.

This employee, in her work in the paint shop, often needs to measure quantities of liquids. She says that the math class improved her ability to measure liquids. She noted that another class member, a welder, improved his measuring skills that were often used in welding.

She has a good attitude towrd the Valmont 2000 project, but she says that she started with a good attitude rather than developing it as a result of instruction. She says that her success in doing class work has caused her to consider taking more classes.

CASE STUDY #4

This employee is a 24 year old white male who works in the paint department. He has been with Valmont less than 5 years.

The Valmont 2000 program assigned this employee to both the writing and the math programs.

This employee said that there were some problems at the beginning of both of the classes. For the math class it was a problem of notification; in the actual instruction this employee felt that the instructor and the instruction were not well organized. However, a tutor helping to teach the class was given high marks for being helpful and knowledgeable. In the writing class the first sessions were poor but improved in later sessions. By the end of the writing class the employee rated the quality of instruction as excellent, and said that he learned quite a bit. The instruction in the math class was satisfactory, and the employee felt that he learned a lot about fractions.

This employee said that being in the classes caused him to gain self-confidence and because of this he was a better and more productive employee than before. He gave few if any specifics of instances of where he was using things that he had learned in class. He said that taking the class had increased both his interest and awareness in writing and math. He feels that the Valmont 2000 project is worthwhile.

CASE STUDY #5

This employee is a 40 year old female welder. The Valmont 2000 program assigned her to both math and writing classes.

The assignment to the math class was inconvenient from several points of view. The time schedule was not convenient for the employee and the place was inconvenient because it was a long distance from where she worked. Consequently, she attended only several sessions and dropped out. She will start again at a more convenient time. In this case the instruction to the math class was not convenient and was not successful. This employee has has an excellent attitude and will probably succeed in the math class after she has been rescheduled.

This employee says that some of the people assigned to the writing class entered the first session with either a neutral or a negative attitude; after the first few sessions most of the people had improved their attitude. She says that her attitude was good from the first.

This employee gives good marks to the instructor. She says that the instructor was friendly and had interesting discussions. The instructor always took time to answer all questions carefully and thoroughly. The instructor used materials directly related to work. This employee gives the instructor a rating of excellent, and says that she learned a lot.

As a result of instruction this employee now says that she has an incresed awareness of grammar not present before. She is now able to proofread her E-mail for errors. She is more careful about punctuation than before. She also says that she is a better listener than before. She feels that she is a better and more productive employee than before. She feels that the Valmont 2000 project has been worthwhile.

CASE STUDY #6

This employee is a 44 year old white male who works a tire retread machine operator. He is a high school graduate.

This employee completed both the writing and math classes. He remembers doing quite well in math during high school, but says that he had forgotten much of what he knew about math. He had forgotten so much that he was not able to help his grade school children when they asked him how to do their homework. Before he completed the writing class, he asked for help from supervisory personnel if he needed to write up a hazard report or other report.

The employee especially enjoyed the math class because he was able to reclaim some of the expertise that he showed when he was a high school student. He apparently did not enjoy the writing class as much; he felt that the instructor sometimes went too fast; but he speaks well of the results achieved in that class. This employee says that the quality of instruction in the math class was very good and the instruction in the writing class was good. This employee gave high marks to those teachers who went slow; took plenty of time to explain; used interesting examples with practical applications; had a good sense of humor; and was able to deal with members of the class who were not especially interested in being in the class.

This employee says that he learned a lot in both of the classes. He says that the instruction has made him a better employee. As a result of the instruction he is more interested in math than before. He says that he would consider taking more classes in math to improve his mastery of the subject. When asked for specific instances of where he used the things he learned in class, he said that he was now able to use the E-mail system more effectively than before. He said he could now write up a hazard report where he would previously asked a supervisor to do it for him. He said that he was now able to help his grade school children with their homework - something he had not been able to do before.

CASE STUDY #7

This employee is is a 34 year old white male welder. He has been at Valmont more than 11 years.

This employee has completed the writing class. He said that before he began the class he was not especially enthusiastic about being in the class. It took about three class sessions for him to improve his attitude and to gain a degree of enthusiasm about the class. He says that he did not start with great enthusiasm, but he figured that he was going to do the work on company time and since he was getting paid, it would be an easy way to collect his wages.

Although the attitude mentioned may seem somewhat cynical, the final result was an employee that perceives a significant improvement in his skills. Employees do the work on company time; they get paid for being in class. They do not have to go to the time and expense of registering for some outside class. The class comes to them for free.

The employee rated the quality of instruction as good. The teacher used a variety of methods and adapted some of the instruction so that it was specific to things going on at Valmont. He said that the content was appropriate for adults. He gives high marks to the teacher for both skill and attitude. He says that he was able to respond to the instructor's questions and doing so gave him confidence in his ability.

As a result of taking the instruction, the employee says that he is now able to use E-mail better than before. He is better able to write up reports than before. He feels more confident of his ability to write than before. He says that taking the class has made him more aware of things like punctuation that he never even noticed before. He talks to his wife about punctuation and grammar. He expressed an interest in taking some additional work in English or writing classes.

CASE STUDY #8

This employee is a 37 year old married male welder at Valmont. According to his own admission and according to test results from the TABE Test, he was a borderline illiterate. Although comprehensive psychological test results are not available, the employee says that he has some degree of dyslexia. It is not clear how severe this problem is nor is it clear how long the employee has been aware of the problem. The Valmont 2000 staff assigned him to the reading class because of his low scores in reading.

The instructor apparently was aware of the severity of the employee's problem and planned an individualized program designed to meet the unique needs of this individual. The instructor worked through personnel at Metropolitan Community College and arranged for the employee to participate in advanced phonics instruction. The employee is very pleased with the progress made to this point. He is continuing work even though the formal classwork has been completed. In addition to the phonics instruction, he has worked with a tutor which has also contributed to his progress.

The employee says that the Valmont 2000 program has helped him to be a better employee. He says that he is now able to both read and write E-mail much better than before. His life outside of work has also changed. He has started reading a newspaper. He enjoys being able to read want ads regarding automobiles for sale, and auto parts for sale, and other similar kinds of want ads. He says that he now reads the comics. The Valmont 2000 Program has made a considerable difference in his life at work and in his life at home.

He notes that much of the materials used for instruction is not written at an adult level. Apparently, this is a common problem for people who wait until they are adults before they master the skill of reading.

The employee says that learning to read may make it possible for him to be promoted; learning to read has removed a bar to a possible promotion.

The employee also commented on the convenience of the learning situation. He was able to do the work as part of job at Valmont. He probably has been aware of his problem for a long time but has never taken any concrete steps to do anything about it. The Valmont 2000 project provided a convenient opportunity to do something about the problem. If it had not been for the Valmont 2000 project, it is not likely that the problem would ever have been addressed.

CASE STUDY # 9

This employee is a 29 year old white male who works in the galvanizing department as a material handler.

Valmont 2000 personnel assigned this employee to the writing class which he had completed prior to the time of this writing. He will take a math class at a later date. He was somewhat skeptical about the class at first, but his attitude improved after attending several sessions of the class.

The writing class had only five persons in it. He feels that it was an advantage to be in a small class. The instructor did lots of group work. The instructor had class members write memos, notes, phone messages and other work related assignments.

He rates the quality of instruction as good. He says that taking the class has improved his punctuation. He says he has become more interested in word meaning and now has an increased awareness of the subject. He says that he is interested in taking more classes.

He says that he thinks the Valmont 2000 project is worthwhile and will have the effect of making him a better employee.

PART I: A SUMMARY REPORT BASED ON NINE INDIVIDUAL ORAL INTERVIEWS

1. Test and Test Procedures. Valmont employees first contact with the Valmont 2000 project was taking the Test of Adult Basic Education - TABE. The interview schedule asked four questions about the TABE test and testing procedures. It takes nearly five hours to administer the TABE test, but almost an hour of that time goes for filling out consent forms, filling out a long questionnaire and other preliminary procedures. In general employees had few comments about the test or about test procedures. Valmont used two methods for administering the test: a single 5 hour block of time and two separate approximately equal sessions. There is no evidence that either way is superior. Some said that it was best to do it all at once and get it over with; at least one other individual liked breaking it into two sessions. There were probably more single session administrations of the TABE test. The test is long but employees seemed to understand that such a test must be lengthy. Opinions differed on the level of difficulty. Some said that it was difficult because it had been so long since they had worked with the content of the test items. One individual said that there were questions on exponents on the test, but exponents was not a topic covered in the math class. One employee complained about the time limit on the test; he said that people vary in their capability of getting things done in a timed situation.(Writers note: the TABE test is rather generous in its time allowances.) In summary of what Valmont staff can learn from this inforation on test administration: keep on doing what we have been doing.

2. Counseling and Test Results. About 7-10 days after the TABE test, Valmont 2000 staff called in employees for individual counseling sessions. The main purpose of these counseling sessions was to explain test results to

3. Attitude. Information on attitude came from questions that asked about attitude prior to class, gender and age differences in attitude, cause of changes in attitude, questions about the overall program, and some follow-up questions. Among those interviewed, nearly all had good attitudes. When questioned about the attitudes of other employees, it appeared that those with good attitudes are in the majority. Several employees said that they had a good attitude all the way through; others said that their attitude improved as a result of attending class. It is probably safe to generalize that the class work was an important element in changing the attitude of those employees who started out with a doubtful or negative attitude. In regard to gender and age differences: there is no indication of gender differences in attitude. There may be some differences in attitude related to age. Some of the people who are close to retirement may be less motivated because they see no opportunity for promotion or advancement. They want to hang on until it is time for them to retire. All those interviewed were asked if the Valmont 2000 project made them a more productive employee. Most gave some sort of positive answer, but none could cite specific examples of productivity. The section of this report on Teachers, Classes, and Methodology contains a number of specific examples of things that employees learned that were useful to them, but they did not necessarily relate that to increased productivity. There was a question about whether taking a class had incresed their interest in the subject - the responses were generally positive. Some, but not all, said that they might consider taking additional classes. Most of the responses were not very specific, but the responses certainly indicate and incresed positive attitude toward learning activities.

4. Teachers, Classes, and Methods. Among employees interviewed the teachers and the quality of instruction were highly rated. Although there was no scale to mark, most siad that the quality of instruction was good or some adjective that indicated that it was better than good. When we asked employees about teaching methods, it was hard to get results; we had to do some prompting and suggesting. Teachers used a wide variety of teaching methods. In a few instances they used materials also in use in Metropolitan Community College. Many used discussions of various sorts; group work was another method mentioned; a guest speaker was also mentioned. Apparently there was a good variety of methodology. Perhaps the most important finding to come out of the interviews was a profile, or description, of those methods and qualities that make a good teacher and a good class. Here are some generalizations that describe good class and a good teaching-learning situation as applied to the setting at Valmont.

a. Going slow was almost always described as a desirable quality. The teacher made sure that everyone understood before going on to the next point. The teacher proceeded one step at a time. The teacher allowed for a generous amount of discussion.

b. Good quality instruction involved using materials associated with the real world of work at Valmont. Good teachers asked the employees to bring materials that they could use in the teaching - learning situation.

c. Good teachers demonstrated the techniques they were teaching using examples related to the real world at Valmont. They allowed employees to ask all the questions necessary.

d. Good teachers used adult oriented materials that did not insult the intelligence of the adults in the class. In only one instance did an employee complain, and that employee had a severe reading disability so that good adult materials were not available.

e. Good teachers had a good sense of humor and were able to deal with class members whose attitude was not positive.

5. Results. In this topic we consider what employees told us about how much they learned, what they told us about how they used what they learned on the job, and what they told us about how new knowledge had changed their lives outside of their working world.

a. Here are some of the responses that employees gave when asked about how much they learned. Some of the quotations my be close to exact quotations in other instances we have edited slightly.

- "I'm still learning"
- "I learned a lot in both classes."
- "went from 5th grade level to 12th grade level."
- "quite a lot"
- "learned a lot about fractions"
- "it was a good general review"
- "learned to divide decimals"
- "learned the meaning of math symbols"
- "learned how to change percents to decimals"
- " it was a good refresher course"
- " learned a lot"

b. Here are some of the responses that employees gave when asked about how much they use what they have learned. Same comment on quotations in part a applies.

- "I can read E-mail better"
- "my E-mail writing capability has improved"
- "my chances of advancement are now better than before"
- "now I am able to write up a hazard report"
- "I feel more confident when required to do some writing"
- "the class improved my measuring skills"
- "I'm better able to measure liquids"
- "I use the math more that I use the writing"

c. Here are some of the responses that employees gave when aksed about how the Valmont 2000 program had changed their life outside of work.

- "I'm now able to read the newspaper"
- "now I can help my kids with their math homework"
- "I have a greater awareness of punctuation"
- "now I notice more things about math and writing"
- "I can help my 7th grader with math"
- "I have an increased awareness of word meaning"
- "I am a better listener"

- "I have a greater awareness of grammar"

In summary sections a, b, and c, above represent significant responses to the Valmont 2000 program.

It appears that the Valmont 2000 program has had a considerable degree of success. It may be useful to consider some of reasons for the positive results reported here. Perhaps more than anything else is the willingness of the management of Valmont Industries to put time and energy into the program. One would hope that this decision will result in a better trained, happier group of employees as well as a more profitable and productive company. Another success factor to consider is the convenience factor. By doing this project on company time, Valmont was able to bring the testing, counseling, and instructing to the employees at the workplace and at no cost to the employees. Thus the employees could participate with little inconvenience and no cost. Without the convenience factor, the results reported would have been less. The performance of the teachers is also a significant success factor. Employees who have partcipated in the Valmont 2000 program will remember mostly the classes and the people who taught the classes. The interviews indicate that the teachers are a key to the success of the program. Last, but not necessarily least, are the contributions of those who initiated, planned, and administered the program. None of the good things could not have happened without their energy, skill, and intelligence.

INDIVIDUAL INTERVIEW QUESTIONS

I'm going to ask you some questions about the Valmont 2000 Project. I'll take notes on some of the things that you say and we will use the information in a report that we will prepare. We will not identify any quotations from you without your specific permission.

There are several reasons for collecting this information. We want to find out what we did well and what we did poorly; we can then use this information to improve our performance. Another use of this information will be to let other people know about the Valmont 2000 Project.

1. Do you have any comments about the scheduling of the TABE tests.

2. Do you have comments about the length of the TABE test.

3. Do you have any comments about the level of difficulty of the TABE test.

4. Do you have any comments about the content of the TABE test. Were there questions, or content, that you believed to be not appropriate.

5. Was the schedule for counseling satisfactory.

6. Did the counselor do a good job of explaining the TABE test results.

7. Was the counseling done in a setting with adequate privacy.

8. What about the attitude of the counselor. Did the counselor treat you with respect.

9. Was the counseling session about right in regard to length.

10. Scores of the TABE test are confidential. Were you satisfied that the test scores were kept confidential by the Valmont 2000 staff.

11. Did you hear discussion or comparison of test scores among the people you work with.

12. Do you have any recommendations on how to improve the counseling experience.

13. Did you take any of the classes offered by the Valmont 2000 program.

14. What can you tell me about the attitude of the people assigned to the _____ class. If you took more than one class, was there a difference in attitude between the two classes.

15. Do you think that you can make any generalizations in regard to the ages of people in the class. Did age make a difference in attitude; did age make a difference in achievement. How about gender differences.

16. Tell me about the teaching methods used in class. Were the methods appropriate for adult learners.

17. Tell me about the content of the class; was it appropriate for adult learners. Do you have suggestions for improvement.

18. Make a judgment on the quality of instruction.

19. In regard to the ____ class, how much do you feel that you learned.

20. Do you think that the class will help you to be a better employee.

21. Did the class have the effect of making you more interested in the subject.

22. As a result of this class, has it made any difference in your life outside of work.

23. Did attending this class make you more interested in taking more classes.

24. Do you think that the Valmont 2000 project was a worthwhile project.

25. Do you think that the Valmont 2000 project will help you to be a more productive employee.

26. What would you say to an employee newly assigned to the ____ class.

27. What were your thoughts about class work before you started in the class.

28. Prior to the time that you became involved in Valmont 2000 project, what was your attitude toward Valmont 2000. Is your attitude different now. Explain. What events caused your attitude to change: testing, counseling, class work. Please make specific responses.

EVALUATION INFORMATION REGARDING INSTRUCTORS/TEACHER ASSISTANTS

PART TIME INSTRUCTOR EVALUATION FORM
SELF EVALUATION
POST OBSERVATION SUMMARY

INSTRUCTOR: ____________________ OBSERVATION #: _____ DATE: ____________________

INTRODUCTION:

Metropolitan Community College utilizes a two-part process to evaluate part-time faculty. The MCC evaluation includes a supervisor evaluation of faculty and an evaluation by students. However, to ensure that the evaluation is a growth setting process, the Valmont 2000 Program expanded the categories identified on Metro's "Part-Time Faculty Evaluation Form."

RATING CRITERIA

The following rating scale will be used:

No opportunity to observe		0 points
Superior		5 points
Above Average		4 points
Average		3 points
Below Average		2 points
Unsatisfactory		1 point

CLASSROOM TECHNIQUE

	Performance Criteria		Rating		Comments
1.	Begins class on time.				
2.	Ends class on time.				
3.	Chooses language to communicate clearly.				
4.	Conveys interest and enthusiasm through varied voice tone and facial expression.				
5.	Makes positive comments about or gives rationales for the importance of learning lesson content. Relates content to work specific tasks whenever possible.				
6.	Selects media/materials to promote mastery of learning objectives. These media/materials include the use of Interactive Video, E-Mail, Terminals and/or any other work-specific items.				
7.	Uses workplace - specific lessons appropriate to the work context.				
8.	Uses an instructional pace which maintains a student interest and involvement.				
9.	Uses "wait time" to promote correct responses to questions.				
10.	Uses a variety of questioning strategies.				
11.	Summarizes the lesson.				
12.	Generates a minimum of 12 workplace - specific problems per 8 week class session.				

TOTAL POINTS	# OF CRITERIA
AVG. RATING:	

KNOWLEDGE AND PREPARATION

	Performance Criteria	Rating	Comments
	Demonstrates mastery of course content through lecture and answering student questions.		
2.	Maintains up-to date mastery of the field through workshop attendance, review of new texts, presentations, classes attended (self-report).		

TOTAL POINTS	# OF CRITERIA
AVG. RATING:	

STUDENT-TEACHER RELATIONSHIP

	Performance Criteria	Rating	Comments
1.	Praises correct verbal responses.		
2.	Praises efforts, partially correct responses.		
	Praises immediately after verbal responses.		
4.	Distributes praise to all students.		
	Provides cues/prompts to shape correct responses.		
	Models/demonstrates in response to errors.		
	Corrects constructively, respectfully.		

TOTAL POINTS	# OF CRITERIA
AVG. RATING:	

MONITORING STUDENT PROGRESS (GRADING/TESTING)

	Performance Criteria	Rating	Comments
	Use tests to assess progress toward learning outcomes.		
2.	Involves students.		
	Checks for understanding with each student during the lesson.		
4.	Assigns classwork reflective of student needs and work-related outcomes.		
	Provides frequent opportunities for student responses during teacher-directed portion of the lesson.		

TAL INTS	# OF CRITERIA
VG. ATING:	

TEAMWORK

	Performance Criteria		Rating		Comments
1.	Completes assigned team-related responsibilities in a timely manner.				
2.	Places team goals above personal action.				
3.	Receptive to ideas and suggestions of others.				
4.	Volunteers and Assists other faculty members.				
5.	Shares helpful information regarding students and instruction.				
6.	Skillfully gives and accepts feedback.				
7.	Adheres to Valmont 2000, Valmont Industries, and MCC policies and procedures.				
8.	Implements Workkeys in classroom instruction.				

TOTAL POINTS	# OF CRITERIA
AVG. RATING:	

AREAS IDENTIFIED FOR EXPANSION AND GROWTH:

Consider specific areas which you have identified for expansion and growth during the next session.

1.

2.

3.

PART TIME INSTRUCTOR EVALUATION FORM
SUPERVISOR EVALUATION
POST OBSERVATION SUMMARY

INSTRUCTOR: ____________________ OBSERVATION #: _____ DATE: ____________________

INTRODUCTION:

Metropolitan Community College utilizes a two-part process to evaluate part-time faculty. The MCC evaluation includes a supervisor evaluation of faculty and an evaluation by students. However, to ensure that the evaluation is a growth setting process, the Valmont 2000 Program expanded the categories identified on Metro's "Part-Time Faculty Evaluation Form."

RATING CRITERIA

The following rating scale will be used:

No opportunity to observe		0 points
Superior		5 points
Above Average		4 points
Average		3 points
Below Average		2 points
Unsatisfactory		1 point

CLASSROOM TECHNIQUE

	Performance Criteria		Rating		Comments
1.	Begins class on time.				
2.	Ends class on time.				
3.	Chooses language to communicate clearly.				
	Conveys interest and enthusiasm through varied voice tone and facial expression.				
5.	Makes positive comments about or gives rationales for the importance of learning lesson content. Relates content to work specific tasks whenever possible.				
6.	Selects media/materials to promote mastery of learning objectives. These media/materials include the use of Interactive Video, E-Mail, Terminals and/or any other work-specific items.				
7.	Uses workplace - specific lessons appropriate to the work context.				
8.	Uses an instructional pace which maintains a student interest and involvement.				
9.	Uses "wait time" to promote correct responses to questions.				
10.	Uses a variety of questioning strategies.				
11.	Summarizes the lesson.				
12.	Generates a minimum of 12 workplace - specific problems per 8 week class session.				

TOTAL POINTS	# OF CRITERIA
AVG. RATING:	

KNOWLEDGE AND PREPARATION

	Performance Criteria		Rating		Comments
1.	Demonstrates mastery of course content through lecture and answering student questions.				
2.	Maintains up-to date mastery of the field through workshop attendance, review of new texts, presentations, classes attended (self-report).				

TOTAL POINTS	# OF CRITERIA
AVG. RATING:	

STUDENT-TEACHER RELATIONSHIP

	Performance Criteria		Rating		Comments
1.	Praises correct verbal responses.				
2.	Praises efforts, partially correct responses.				
3.	Praises immediately after verbal responses.				
4.	Distributes praise to all students.				
5.	Provides cues/prompts to shape correct responses.				
6.	Models/demonstrates in response to errors.				
7.	Corrects constructively, respectfully.				

TOTAL POINTS	# OF CRITERIA
AVG. RATING:	

MONITORING STUDENT PROGRESS (GRADING/TESTING)

	Performance Criteria		Rating		Comments
1.	Use tests to assess progress toward learning outcomes.				
2.	Involves students.				
3.	Checks for understanding with each student during the lesson.				
4.	Assigns classwork reflective of student needs and work-related outcomes.				
5.	Provides frequent opportunities for student responses during teacher-directed portion of the lesson.				

TOTAL POINTS	# OF CRITERIA
AVG. RATING:	

TEAMWORK

	Performance Criteria		Rating		Comments
.	Completes assigned team-related responsibilities in a timely manner.				
2.	Places team goals above personal action.				
3.	Receptive to ideas and suggestions of others.				
4.	Volunteers and Assists other faculty members.				
5.	Shares helpful information regarding students and instruction.				
6.	Skillfully gives and accepts feedback.				
7.	Adheres to Valmont 2000, Valmont Industries, and MCC policies and procedures.				
8.	Implements Workkeys in classroom instruction.				

AREAS IDENTIFIED FOR EXPANSION AND GROWTH:

Consider specific areas which you have identified for expansion and growth during the next session.

1.

2.

3.

PART TIME INSTRUCTOR EVALUATION FORM
PEER EVALUATION
POST OBSERVATION SUMMARY

INSTRUCTOR: ____________________ OBSERVATION #: _____ DATE: ____________________

INTRODUCTION:

Metropolitan Community College utilizes a two-part process to evaluate part-time faculty. The MCC evaluation includes a supervisor evaluation of faculty and an evaluation by students. However, to ensure that the evaluation is a growth setting process, the Valmont 2000 Program expanded the categories identified on Metro's "Part-Time Faculty Evaluation Form."

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CLASSROOM TECHNIQUE

	Performance Criteria		Rating		Comments
1.	Begins class on time.				
2.	Ends class on time.				
3.	Chooses language to communicate clearly.				
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6.	Selects media/materials to promote mastery of learning objectives. These media/materials include the use of Interactive Video, E-Mail, Terminals and/or any other work-specific items.				
7.	Uses workplace - specific lessons appropriate to the work context.				
8.	Uses an instructional pace which maintains a student interest and involvement.				
9.	Uses "wait time" to promote correct responses to questions.				
10.	Uses a variety of questioning strategies.				
11.	Summarizes the lesson.				
12.	Generates a minimum of 12 workplace - specific problems per 8 week class session.				

TOTAL POINTS	# OF CRITERIA
AVG. RATING:	

KNOWLEDGE AND PREPARATION

	Performance Criteria		Rating		Comments
	Demonstrates mastery of course content through lecture and answering student questions.				
2.	Maintains up-to date mastery of the field through workshop attendance, review of new texts, presentations, classes attended (self-report).				

TOTAL POINTS	# OF CRITERIA
AVG. RATING:	

STUDENT-TEACHER RELATIONSHIP

	Performance Criteria		Rating		Comments
1.	Praises correct verbal responses.				
2.	Praises efforts, partially correct responses.				
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4.	Distributes praise to all students.				
.	Provides cues/prompts to shape correct responses.				
	Models/demonstrates in response to errors.				
	Corrects constructively, respectfully.				

TOTAL POINTS	# OF CRITERIA
AVG. RATING:	

MONITORING STUDENT PROGRESS (GRADING/TESTING)

	Performance Criteria		Rating		Comments
	Use tests to assess progress toward learning outcomes.				
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	Checks for understanding with each student during the lesson.				
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	Provides frequent opportunities for student responses during teacher-directed portion of the lesson.				

TAL OINTS	# OF CRITERIA
AVG. RATING:	

TEAMWORK

	Performance Criteria		Rating		Comments
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TOTAL POINTS	# OF CRITERIA
AVG. RATING:	

AREAS IDENTIFIED FOR EXPANSION AND GROWTH:

Consider specific areas which you have identified for expansion and growth during the next session.

1.

2.

3.

TEACHER ASSISTANT
SELF EVALUATION
POST OBSERVATION SUMMARY

INSTRUCTOR: ____________________ **OBSERVATION #:** _____ **DATE:** ____________________

INTRODUCTION:

Metropolitan Community College utilizes a three-part process to evaluate part-time faculty. The MCC evaluation includes a supervisor evaluation of faculty, and instructor evaluation and an evaluation by students. However, to ensure that the evaluation is a growth setting process, the Valmont 2000 Program expanded the categories identified on Metro's "Part-Time Faculty Evaluation Form."

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CLASSROOM TECHNIQUE

	Performance Criteria		Rating		Comments
1.	Arrives to class on time.				
2.	Stays to end of class.				
3.	Chooses language to communicate clearly.				
4.	Conveys interest and enthusiasm through varied voice tone and facial expression.				
5.	Makes positive comments about or gives rationales for the importance of learning lesson content. Relates content to work specific tasks whenever possible.				
6.	Uses an instructional pace which maintains a student interest and involvement.				
7.	Uses "wait time" to promote correct responses to questions.				
8.	Uses a variety of questioning strategies.				
9.	Summarizes the lesson.				

TOTAL POINTS	# OF CRITERIA
AVG. RATING:	

KNOWLEDGE AND PREPARATION

	Performance Criteria		Rating		Comments
1.	Demonstrates mastery of course content through answering student questions.				

TOTAL POINTS	# OF CRITERIA
AVG. RATING:	

TEACHER-ASSISTANT STUDENT RELATIONSHIP

	Performance Criteria		Rating		Comments
1.	Praises correct verbal responses.				
2.	Praises efforts, partially correct responses.				
3.	Praises immediately after verbal responses.				
4.	Distributes praise to all students.				
5.	Provides cues/prompts to shape correct responses.				
6.	Models/demonstrates in response to errors.				
7.	Corrects constructively, respectfully.				

TOTAL POINTS	# OF CRITERIA
AVG. RATING:	

MONITORING STUDENT PROGRESS

	Performance Criteria		Rating		Comments
1.	Involves students.				
2.	Checks for understanding with each student during the lesson.				
3.	Covers classwork reflective of student needs and work-related outcomes.				
4.	Provides frequent opportunities for student responses during Teacher Assistant directed portion of the lesson.				

TOTAL POINTS	# OF CRITERIA
AVG. RATING:	

TEACHER ASSISTANT INSTRUCTOR RELATIONSHIP

	PERFORMANCE CRITERIA		RATING		COMMENTS
	Communicates Student progress to instructor				
2.	Teaches lesson assignments as directed by the instructor				
3.	Provides feedback of observation of students' class performance.				
4.	Maintains confidentiality of Valmont 2000 records and materials.				
5.	Suggests methods to improve delivery of services in the classroom.				

TOTAL POINTS	# OF CRITERIA
AVG. RATING:	

INSTRUCTOR EVALUATION OF
TEACHER ASSISTANT
POST OBSERVATION SUMMARY

INSTRUCTOR: ____________________ **OBSERVATION #:** _____ **DATE:** . ____________________

INTRODUCTION:

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MONITORING STUDENT PROGRESS

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TOTAL POINTS	# OF CRITERIA
AVG. RATING:	

TEACHER ASSISTANT INSTRUCTOR RELATIONSHIP

	PERFORMANCE CRITERIA		RATING		COMMENTS
1.	Communicates student progress to instructor				
2.	Teaches lesson assignments as directed by the instructor				
3.	Provides feedback of observation of students' class performance.				
4.	Maintains confidentiality of Valmont 2000 records and materials.				
5.	Suggests methods to improve delivery of services in the classroom.				

TOTAL POINTS	# OF CRITERIA
AVG. RATING:	

TEACHER ASSISTANT
EVALUATION OF INSTRUCTOR
POST OBSERVATION SUMMARY

INSTRUCTOR: ____________________ **OBSERVATION #:** _____ **DATE:** ____________________

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TOTAL POINTS	# OF CRITERIA
AVG. RATING:	

TEACHER ASSISTANT INSTRUCTOR RELATIONSHIP

	PERFORMANCE CRITERIA		RATING		COMMENTS
.	Communicates student progress to Teacher Assistant.				
2.	Provides clear instructions to the Teacher Assistant regarding lesson assignments.				
3.	Provides feedback to Teacher Assistant on class performance.				
4.	Maintains confidentiality of Valmont 2000 records and materials.				
5.	Is open to suggestions to improve instruction in the classroom.				

TOTAL POINTS	# OF CRITERIA
AVG. RATING:	